University of Alberta

Implementing daily physical activity in a junior high school: A case study

by

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Abstract

There is limited literature examining how Alberta's Government mandated daily physical activity (DPA) can be implemented in schools. Using a case study methodology this study examined how one junior high school implemented DPA in attempt to increase student physical activity levels. Qualitative data were collected by examining DPA documents, conducting principal (n=2) and teacher (n=5) interviews, student focus groups (n=3) and by observing physical activity in the school over a seven week period. Quantitative surveys relating to DPA in the school were completed by all school teachers (n=13). A thematic analysis revealed seven themes, the school context, no perceived change, barriers to implementation, change did happen, promising practices, students' responses and behaviours, and future improvements. Education change literature (Fullan, 2001) provides insight into the findings which indicate that DPA for 30 minutes a day is not guaranteed for every student. Findings suggest that the theory behind the provincial mandate is positive however implementation proves to be more complex and problematic.

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Chapter 1. Introduction

Overweight and obesity in Canadian children and youth is prevalent and increasing (Tjepkema & Shields, 2005a). Among Canadian children and youth age 2 through 17, 26% are overweight and 8% are obese. These statistics are alarming as overweight children have greater chance of becoming overweight adults (Braddon, Rodgers, Wadsworth, & Davies 1986; Freedman, Shear, Burke, Srinivasan, Webber, Harsha et al., 1987; Whitaker, Wright, Pepe, Seidel, & Dietz, 1997), who are subject to preventable chronic health complications such as cardiovascular diseases, diabetes, some forms of cancer, and asthma as well as psychosocial disorders (Dietz, 1998; Eckel & Krauss, 1998; Andersen, 2000; Health Canada, 2003; Cramer and Steinwert, 1998). Research has shown that health risk factors such as diabetes and cardiovascular diseases (CVD) have now been identified in overweight and obese children and youth (Freedman, Dietz, Srinivasan & Berenson, 1999).

While causes of overweight and obesity are multi-factorial and can be attributed to several environmental and genetic factors, sustaining an energy balance between energy in (caloric consumption) and energy out (basal metabolism, the energy cost of metabolised food and physical activity) may be key to maintaining a healthy weight (Health Canada, 2003). Overweight and obesity occur as many consume too many calories in food and drink consumption (Nicklas, Young, Baranowski, Zakeri & Berenson, 2003) and expend too little energy by not getting enough physical activity (Canadian Fitness and Lifestyle Research Institute [CFLRI], 2005a). Positive imbalance between

energy in and energy out results in excess weight. Therefore, while there are a multitude of potential causes of overweight and obesity and the treatment has subsequently become more multifaceted, research has recognized that a healthy diet and regular physical activity are key contributors to treatment and prevention (World Health Organization [WHO], 2007; Health Canada, 2002; CFLRI, 2005a).

Physical activity is important for children and youth as it has been identified as a key contributor to fighting obesity and is optimal for healthy growth and development (CFLRI, 2005b). Physical activity has also been associated with improved self-esteem (Tremblay, Inman & Willms, 2000) and academic achievement in children and youth (Keays & Alison, 1995; Shephard, 1997).

In an effort to increase physical activity, individual-, school- and community-based physical activity interventions have been developed and implemented with varying degrees of success. Schools have been identified as key intervention targets to changing dietary habits and increasing physical activity levels, as schools access large numbers of children and youth, parents, staff and community (Story, Kaphingst, & French, 2006; T. Baranowski, Cullen, Nicklas, Thompson, J. Baranowski, 2002).

In Alberta, the provincial government has attempted to contribute to fighting the obesity epidemic by mandating a Daily Physical Activity (DPA) initiative that required all Alberta schools grade one through nine to provide students with 30 minutes of daily physical activity (Alberta Education, 2006). Schools themselves are responsible for determining how and when DPA will occur and teachers are to provide the activity sessions to students. Promising

practices of the DPA initiative would include providing 30 minutes of activity daily to all students, while following the guiding principles put forth by Alberta Education.

Implementing a daily physical activity initiative specifically may prove to be difficult as generalist classroom teachers may be required to lead and instruct physical activity sessions. Studies examining generalist teachers teaching physical education (PE) found that teachers with no PE background provided students with less meaningful physical experiences and less time spent being physically active, due to a lack of training, lack of efficacy, lack of time and no access to expertise (Tremblay, Pella & Taylor, 1996). While DPA is not PE, similar situations may prevail. If teachers lack training, time, confidence and belief in physical activities and the DPA initiative, DPA may not positively influence activity levels of students.

The new top-down DPA mandated initiative required schools to modify existing school protocol in order to satisfy the requirements of the proposed change. While education change literature states that the implementation of top-down mandates are often ineffective (Fullan, 2001; Fink & Stoll, 2005; Sergiovanni, 2005; Darling-Hammond, 2005), it has also been suggested that implementing change in schools is possible if approached correctly. By including all staff and community members in the organization and planning process, providing staff development opportunities, creating leadership roles, and changing school culture, new initiatives can have positive successes (Fullan,

2001; Fink & Stoll, 2005; Sergiovanni, 2005; Darling-Hammond, 2005; Cherniss, 2006; Perez, Milestein, Wood, & Jacquez, 1999).

Have schools successfully implemented the provincially mandated DPA initiative? The examination of the changes occurring in schools surrounding the implementation of the DPA initiative is important, particularly as potential recommendations will help to shape future health initiatives and implementation strategies in schools.

Purpose

The purpose of this study is to examine the change processes associated with the implementation of Alberta's mandated daily physical activity policy at the junior high school level. More specifically this study investigated how one junior high school implemented DPA and identified the factors that were associated with and key to changing and integrating DPA into the pre-existing school protocol.

Research Questions

Specific questions addressed included:

1. How was DPA initially implemented?
2. How and what changes have occurred since initial implementation? If changes were made to implementation, why?
3. How is DPA implemented currently?

One school that had shown some promising practices of DPA implementation was purposefully selected for the case under study. Promising practices included providing activities that vary in form and intensity, consider all students' abilities,

consider resources available within the school and the larger community and allow for student choice (Alberta Education, 2006). Three units of analysis: administration (i.e., the principal and vice-principal), teachers and grade nine students, were used to examine change processes within the selected school. Methods included semi-structured interviews with administration and staff, student focus groups, teacher surveys and observations within the school to confirm information collected by other means. Interview questions, surveys and observations specifically focused on how DPA was initially implemented in the school and the changes that have occurred throughout the implementation process.

Significance

This research provides insight into DPA implementation at the level of the principal, teacher and student. Data collected illuminates the positive and negative occurrences experienced throughout the process of change from each unit of analysis. Using educational change literature and the data collected from this research, recommendations regarding implementation of future school health based initiatives are made. Since schools are frequently used as intervention sites, this study has the potential for long ranging impact.

Definitions

Physical Activity (PA): all leisure and non-leisure body movements resulting in an increased energy output from the resting position (Warburton, Whitney Nicol & Bredin, 2006).

Physical Education (PE): a core subject from kindergarten through to grade 12 that aims to enable students to develop the knowledge, skills and attitudes necessary to lead an active healthy lifestyle (Alberta Education, 2006).

Body Mass Index (BMI): the individual's body weight (kg) divided by their height in meters squared (Dieticians of Canada, et al., 2004).

Overweight and Obesity: Overweight is defined as a BMI of 25.0-29.9, while obesity is defined as BMI greater then 30 (Dieticians of Canada, et al., 2004). In children and youth the 85th and 95th age- and gender-based percentiles of population normative data are the recommended cutpoints to identify overweight and obesity (McCarthy, Cole, Fry, Jebb, & Prentice, 2006).

Chapter 2. Literature Review

This literature review will focus on obesity and its causes and prevalence in Canadian children and youth; the importance of physical activity in children and youth; school interventions to increase physical activity levels; and education change theory.

Obesity

Over the last three decades, overweight and obesity have become a growing epidemic in many first world countries including Canada (WHO, 2007). Preventable chronic health complications associated with overweight and/or obesity include but are not limited to cardiovascular disease, type II diabetes, the development of some cancers, asthma and psychosocial disorders (Eckel & Krauss, 1998; Andersen, 2000; Health Canada, 2003; Dietz, 1998; Cramer and Steinwert, 1998). Katzmarzyk and Ardern (2004) found that from 1985 to 2000, the total number of deaths in Canada related to overweight and obesity was greater than 57,000. Adding to this death toll is the economic burden associated with overweight/obesity. The total direct cost of weight related chronic diseases to the Canadian health care system was 1.6 billion dollars in 2001 (Katzmarzyk & Janssen, 2004). With the addition of indirect costs, the annual cost to the health care system was 4.6 billion, or 2.2% of total health care costs.

Prevalence of Obesity in Canada

In Canada the statistics regarding death and economic burden are alarming because current research shows that 23.1% of Canadian adults, or 5.5 million people age 18 or older, have a body mass index (BMI) equal to or greater

than 30, making them obese (Tjepkema & Shields, 2005a). An additional 36.1% (8.6 million) are overweight with BMI ranging between 25 and 29.9.

Using age and gender cut points for BMI (International Obesity Task Force cut-points; Cole, Bellizzi, Flegal & Dietz, 2000), and the Canadian Community Health Survey (CCHS), Tjepkema and Shields (2005b) reported that among Canadian children and adolescents age two to 17, 26% were overweight (BMI > 85^{th} and $\leq 95^{th}$ age- and gender- specific percentile) and 8% were obese (BMI $>95^{th}$ age- and gender- specific percentile). These rates have increased dramatically when compared to data collected from the Canada Health Survey (CHS) in 1978/1979 where among two to 17 year olds overweight and obesity rates were 12% and 3%, respectively (CHS; Shields, 2006).

The statistics regarding child and youth obesity are particularly disturbing as overweight and obese children are likely to become overweight and obese adults where health risks are widely known (Dietz & Robinson, 2005; Braddon, Rodgers, Wadsworth, Davies, 1986; Freedman, Shear, Burke, Srinivasan, Webber, Harsha, et al., 1987; Whitaker, Wright & Pepe, et. al., 1997). Using BMI measures of 854 young American adults (age 21-29) researchers compared adulthood BMI with childhood BMI based on different age ranges (toddler, preschool, before puberty, puberty, after puberty, young adulthood) (Whitaker, Wright & Pepe, et. al.). Childhood BMI measures were derived from past medical records and results showed that for children who were obese after the age of 6 years (before puberty stage), the probability of adult obesity exceeded 50%, compared to 10% for non obese children.

Causes Associated with Childhood Overweight and Obesity

The causes of overweight and obesity are multi-factorial and can be attributed to several environmental and genetic factors. Poor diet and physical inactivity specifically have been identified as key factors contributing to the epidemic, and as a result the World Health Organization (2002) created a global strategy for diet, physical activity and health. The purpose of the strategy was to reduce the risks and incidence of noncommunicable diseases through the promotion of healthy diet and physical activity (World Health Organization, 2002).

Sustaining an energy balance between energy in (caloric consumption) and energy out (basal metabolism, energy cost of metabolizing food and physical activity) has been identified as a key factor to maintaining a healthy weight (Health Canada, 2006). Overweight and obesity occur as too many calories from food and drink are consumed (Nicklas, et al., 2003) and too little energy is expended by not getting enough physical activity (CFLRI, 2005). A positive balance between energy in and energy out results in excess weight. Therefore, while there are a multitude of potential causes of overweight and obesity and the treatment has become more multifaceted, research has recognized that regular physical activity and eating a nutritious diet are major contributors to treatment and prevention (Health Canada, 2002; WHO, 2007; CFLRI 2005a).

Health Canada has established guidelines to eating a nutritious diet however research has shown that many are not meeting these suggestions (Canadian Community Health Survey; Tjepkema & Shields, 2005a). Tjepkema and Shields reported that 60% of Canadian children and youth age two to 17

consumed less than the recommended five fruits and vegetables daily and those who ate less than five were significantly (10%) more likely to be obese when compared to those who ate the recommended daily amounts.

Children and youth are also consuming larger portions and as a result too many calories, many of which are being derived from foods high in sugar and fats, processed foods and overall foods lacking in dietary quality (Nicklas, et al., 2003). Over consumption of foods lacking in dietary quality has been linked with overweight and obesity. In the Bogalusa Heart Study, cross-sectional methods were used to assess dietary patterns and compare BMI measures in 1562 children aged 10 years over a 21-year period. Findings showed that overall, eating patterns such as consumption of sweetened beverages, sweets, and meats, and total gram consumption of low-quality foods were significantly positively associated with overweight status (Nicklas, et al.).

Physical activity guidelines for Canadian children and youth have also been established. According to Canada's Physical Activity Guide to Healthy Active Living, the guide for children and youth encourages children to start with 30 minutes or more a day of physical activity combining endurance, flexibility and strength activities and gradually increasing this amount to 90 minutes daily in order to reap the benefits associated with physical activity (Health Canada, 2002). While increasing physical activity, children and youth should also gradually decrease sedentary behaviours, such as "screen time" (e.g. television viewing, computer and video game use) activities by 90 minutes daily (Health Canada).

Regular physical activity can have positive effects on physical health, such as decreasing incidences of overweight/obesity, the development of some cancers, cardiovascular disease and diabetes mellitus (Nicklas et al., 2003; Dietz & Robinson, 2005). In children and youth regular physical activity has also been associated with increased levels of self-esteem (Tremblay, Inman & Willms, 2000) and performance in academic achievement (Keays & Alison, 1995; Shephard, 1997).

In a study conducted with a large group (n=6,923) of grade six students from New Brunswick, researchers found that increasing the physical activity component in physical education classes resulted in increases in self-esteem levels in students (Tremblay, Inman & Willms, 2000). Weak correlations between academic achievement and physical activity were also found. Research reviewed by Keays and Alison (1995), however found that moderate to vigorous physical activity enhanced performance in academic achievement such as reading, memorization and categorization as well as attitude and discipline. Shephard (1997) supported these findings, stating that there was a positive connection between physical activity and academic performance. While Tremblay, Inman and Willms (2000) did not find a direct significant connection between physical activity and academic performance, they speculated that an increase in self-esteem may indirectly result in future increases in academic performance. This research also found that student behaviour was more manageable in the classroom where physical education was enhanced, when

compared to the control group where physical education was not enhanced (Tremblay, Inman & Willms).

Children and youth who are more active are also less likely to smoke or drink alcohol (Stephens & Craig, 1990; Smally, Wittler & Oliverson, 2004). In a Finnish study (n=4240) examining the relationship between smoking and physical activity researchers controlled for familial confounds by including twin siblings (n=1870 twin pairs) (Kujala, Kaprio & Rose, 2007). Participants' activity levels were assessed at age 16, 17 and 18.5 and daily smoking was predicted at the ages 22 through 27. Results found that when compared to persistent physical activity participation, persistent physical inactivity predicted increased risk of daily smoking in early adulthood.

While the benefits of physical activity are indisputable, many children and youth do not meet Canada's Physical Activity Guidelines (CFLRI, 2005a). Recent research (CFLRI, 2005a) shows that 91% of Canadian children and youth, age five to 17 are not active enough to satisfy energy expenditure guidelines of 90 minutes of physical activity daily necessary for optimal growth and development.

For the past three years, using field experts and data collected from studies accessing large Canadian sample sizes such as the 2005 Physical Activity Monitor (PAM), (CFLRI, 2005a), and the Canadian Physical Activity Levels Among Youth Survey (CAN PLAY) (CFLRI, 2007), Healthy Active Kids Canada (2007) has created a national report card examining health related issues associated with physical activity levels of Canadian children and youth. The report card is organized into categories including physical activity and

inactivity, health, societal influences on physical activity, school and community, and policy and investment. Each category has specific subheadings and all subheadings are given a school letter grade based on the summary of research examined.

Over the past three years, the overall assessment of physical activity assigned to Canadian children on the report card has been a failing grade of D. It has been reported that children ages 10 to 16 are spending six hours per day in front of a screen (Healthy Active Kids Canada, 2007) and as a result a low grade of D- was assigned for screen time activities. Research has shown that there is a link between screen time activities and physical inactivity, and those who watch three or more hours of television a day may be at greater risk for obesity (Tremblay & Willms, 2003; Robinson, 1999).

In 2005 and 2006 a grade of D was assigned to the physical activity category of the report card. Last year (2007) the grade assigned was an F, indicating a continuing and worsening problem with the activity levels of Canadian children and youth (Healthy Active Kids, 2007).

School Interventions

While the literature shows that physical activity interventions occur at a variety of levels, for example at the community or individual level, schools are of particular interest as intervention sites because it is possible to access large numbers of children at one time. Second to only the home, children and youth spend the majority of their time in schools. In fact, 90% of children are enrolled in school, where physical and health education are offered at some level, and

where in some cases food and after school care are provided (T. Baranowski, Cullen, Nicklas, Thompson, J. Baranowski, 2002). Relevant literature has suggested that the school environment is a key target in health promotion as schools provide access to not only students, but teachers, parents, community, and policy (Story, Kaphingst, & French, 2006).

Within a school, teachers have a direct influence on the individual students. Teachers often act as role models, and thus have the ability to influence student behaviour both negatively and positively. If teachers promote healthy eating and physical activity, students are more inclined to follow their actions and value healthy behaviour (Story, Kaphingst & French; Weber Cullen, T. Baranowski et al., 1999).

Difficulties related to the holistic development of students can arise as teachers often place more emphasis on "core" state and provincially tested subjects such as writing, reading and math where learning takes place in a sedentary environment, and neglect other subjects such as physical education (PE) (McPhillips-Tangum, Torghele, Saarlas & Renahan-White, 2006; Canadian Association for Health, Physical Education, Recreation and Dance [CAHPERD], 2006). On average, Canadian schools offer less than one hour per week of physical education, while "core" subjects are offered daily (CAPHERD).

In school stakeholder interviews, McPhillips-Tangum and colleagues (2006) found that teachers often struggle with the added challenge of obesity because of the importance placed on school testing. One stakeholder said "people look to schools to solve all of society's ills for the next generation", but

noted that schools are "front and center concerned about getting all the kids to do well on the state tests so that schools are not penalized [financially] by the government" (pg. 16). Another stakeholder agreed and stated that "school administrators are not held accountable for whether people have a heart attack in 30 years. They're being held accountable for how school children are doing on the test scores tomorrow" (pg.17).

Other research shows that in addition to a lack of time, the teaching of PE is often problematic or ineffective because non- specialist teachers have a lack of training, lack of in-services, no access to expertise and a lack of teaching efficacy/competence (Tremblay, Pella & Taylor., 1996). Teachers are often overwhelmed with school requirements and are lacking time, resources and ability to effectively contribute to the effort to increase physical activity levels and decrease time spent on sedentary activities (McPhillips-Tangum et al., 2006).

Many intervention studies focused on integrating physical activity and healthy eating into the curriculum, enhancing physical education and providing teacher training in order to make student experiences more beneficial have been developed and implemented in schools. Some studies have shown positive effects in increasing physical activity, changing poor nutrition habits and in some instances lowering BMI (McKenzie, Stone, Feldman, Epping, Yang, Strikmiller et. al., 2001; Sallis, McKenzie, Alcaraz, Kolody, Faucette & Hovell, 1997; Veugelers & Fitzgerald, 2005; Spiegel & Foulk, 2006; Gortmaker, Peterson, Wiecha, Sobol, Dixit & Laird., 1999; Naylor, MacDonald, Zebedee, Reed & McKay, 2006; Sallis, McKenzie, Conway, Elder, Prochaska, Brown, et al., 2003; Carrel, Clark,

Peterson, Nemeth, Sullivan & Allen, 2005; Stone, McKenzie, Welk & Booth, 1998).

In a recent Canadian study conducted in schools across Nova Scotia, Veugelers and Fitzgerald (2005) collected data from a large representative sample (n=5200) of grade 5 students, their parents and school principals, including height and weight, dietary intake, physical activity and sedentary behaviours of students. Data were collected and compared between three types of schools: those that reported having healthy menu alternatives; those that had a coordinated program encompassing the recommendations put forth by the Centres for Disease Control (CDC) for school based healthy eating in schools; and those that had no nutrition promotion program in place. Results showed that students who attended schools participating in a health promotion program had significantly fewer incidences of obesity, better nutrition habits and overall significantly greater participation in physical activity when compared to the students who attended schools with neither form of health promotion program.

Sports, Play and Active Recreation for Kids (SPARK), an intervention in California schools, assigned seven elementary schools to one of three conditions related to physical education (PE) classes: physical education specialist led PE classes; classroom teacher led PE classes; or a control group which continued with usual practices (Sallis, et al., 1997). The SPARK program was taught to both PE specialists and classroom teachers, with the objectives being to promote high levels of physical activity, teach movement skills and make PE enjoyable. Classroom management and instructional skills were also provided to ensure that

teachers could implement the PE program effectively. Over a two year period self reported physical activity, accelerometer data, and fitness and anthropometric measures in grade four students were all collected. PE classes were observed directly by researchers using the System for Observing Fitness Instruction Time (SOFIT) (McKenzie, Sallis & Nader, 1991). Results showed that students in the two intervention groups spent significantly more time being physically active at school when compared to those in the control schools. Dowda, Sallis, McKenzie, Rosengrad and Kohl (2005) followed up on the SPARK project and found that 80% of schools who initially adopted the program had sustained use after four years, showing that school intervention programs can have lasting effects.

The Child and Adolescent Trial for Cardiovascular Health (CATCH), showed similar results to those in the SPARK study (McKenzie et al., 2001). Schools were assigned to a control or an intervention group. Across four American states over a two and half year span, the CATCH intervention was implemented into schools where PE classes were designed to provide ample opportunities for all students to be more physically active. Professional development sessions for teachers and CATCH curricula guidebooks were provided. SOFIT was also used to observe PE classes (McKenzie, Sallis & Nader, 1991). Results demonstrated that students in intervention schools increased time spent being moderate to vigorously physically active (MVPA) from 38% to 50% after CATCH was implemented. Further, classes lead by PE specialists were significantly effective in providing students with increased time spent being physically active, increased time allocated to skill acquisition, and

increased general PE and fitness knowledge. The authors stressed that while PE specialists appear to be the most beneficial instructors, classroom teacher lead PE sessions can be improved with professional development (McKenzie, et al., 2001).

The main goal of the Action Schools! BC (AS! BC) intervention program was to augment physical activity in elementary schools to 150 minutes per week by providing generalist teachers with training and resources to operationalize AS! BC. AS! BC supports the province's existing PE curriculum and offers additional physical activities opportunities during the school day (Naylor et. al., 2006). Ten schools were randomly assigned to one of three categories: a usual practice group, where no changes were made to existing implementation; a liaison group, where a liaison leader had weekly contact with the school to provide mentorship and demonstrations with the school facilitator and classroom resources were increased; or to a champion group, where a school facilitator had initial training sessions with a 'champion' teacher who then became responsible for activating and supporting their colleagues with the implementation of the program. Throughout the 11 month intervention period grades four to six teachers completed weekly activity logs including type, frequency, and duration of PA in the classroom or in PE. Results showed that champion schools delivered significantly more minutes of physical activity per week when compared to usual practices schools. Differences between champion and liaison schools were insignificant. These results may suggest the importance of having an on-site staff member highly involved in the intervention. For the overall study period,

minutes of PA delivered were significantly greater in the champion group (+67.4 min/week) and the liaison group (+55.2min/week) when compared to the usual practice group. Key findings from the study indicate that the implementation of a program to increase PA in a school setting was most successful when teachers are provided with resources, training and support and necessary to deliver the program.

A review and synthesis by Stone and colleagues (1998), suggests that while there are several school based interventions more attention is needed in middle schools, where physical activity levels tend to decrease and obesity rates increase within the pre- and adolescent age range.

In California, 24 middle schools, grade six to eight, were randomly assigned to either a control or an intervention group as part of the Middle School Physical Activity and Nutrition (M-SPAN) study (Sallis, et al., 2003). Intervention strategies focused on changing school policies and environments to provide healthy food choices and more opportunities for physical activity at school. Observations occurred and measures were taken by five trained individuals using SOFIT (McKenzie, Sallis & Nader, 1991). Following two years of study, results showed no significant changes in increasing PE lesson length however the intervention did significantly contribute to time spent in MVPA, approximately three minutes per lesson. While boys showed significant gains in moderate to vigorous physical activity (MVPA) girls did not. Researchers concluded that future interventions should be tailored to include activities preferred by girls, different motivation and instructional techniques, and single-sex PE classes.

Planet Health (Gortmaker et. al., 1999), another school based intervention study focusing on middle school students (n= 1295) grades 6 and 7 found different results to those in M-SPAN. Ten schools were assigned to control or intervention groups. Control school received their usual health and PE curricula while intervention schools implemented Planet Health. The Planet Health intervention was designed to provide students with cognitive and behavioural skills to enable changes to reduce obesity by increasing MVPA, reducing television viewing by two hours per day, decreasing consumption of high fat foods and increasing the consumption of fruits and vegetables to five or more a day. Program components were delivered by school teachers in PE and other core subject areas. Each intervention school received the Planet Health program of teacher workshops, classroom lessons, PE materials, wellness sessions and fitness funds. BMI and triceps skinfolds (TSF) measures were taken and food and activity surveys were completed by students. After the two year intervention of Planet Health, obesity rates significantly decreased among girls from 23.6% to 20.3% when compared to the control school, where increases in obesity (21.5% to 23.7%) were demonstrated. Researchers speculate that the obesity decrease was due to the reduction in screen time and the increase in fruit and vegetable consumption. Boys in both intervention and control groups showed decreases in obesity and there were no significant differences between groups. The lack of intervention effect on boys may be attributed to several factors including the premise that girls could be more attuned to diet and physical activity and thus may have shown more interest in the program. Other research shows that girls

are more aware of body dissatisfaction and body image when compared to boys because of social influences and media that exist in society (Hargreaves & Tiggemann, 2004).

While interventions in schools have been created it seems that results have varied across studies. This may be in part due to the idea that each school is unique and therefore it may be difficult to determine whether specific interventions will work in all schools. While differences prevail, there were some common themes across the studies. All of the studies that provided a form of teacher training or professional development resulted in teachers providing more effective forms of physical education to students. It also appeared that when teachers were subject to on-going training and additional resources, outcomes were more favourable for providing increased and more frequent levels of physical activity for students. With more intervention studies, or replications of past intervention studies that have shown positive successes, further common successful strategies may be identified.

Daily Physical Activity (DPA)

In response to the trends in physical inactivity and obesity, in 2003 the Minster of Alberta Learning, Lyle Oberg, made the announcement that the Daily Physical Activity (DPA) initiative would be implemented in schools. The policy that mandates that all Alberta schools grade one to nine provide 30 minutes of physical activity daily to all students began implementation in 2005 (Alberta Education, 2006). Other provinces are taking similar action. Ontario has mandated all elementary students receive 20 minutes of DPA, and British

Columbia has followed Alberta's lead, mandating 30 minutes of daily physical activity (Ontario Ministry of Education, 2006; British Columbia Ministry of Education, 2007).

With the main goal of the DPA initiative in Alberta to increase students' physical activity levels, Alberta Education established a flexible policy statement to guide schools in the implementation of the initiative (Alberta Education, 2006). The policy statement declared that school authorities would implement DPA through activities that are organized by the individual school and that school authorities have the flexibility to use both instructional and non-instructional hours to implement DPA.

Guiding principles were provided with the initiative in order to aid schools in the development of the implementation process. These guidelines suggested that daily physical activities should, a) vary in form and intensity, b) take into account each student's ability, c) consider resources available within the school and the larger community and d) allow for student choice (Alberta Education, 2006). These principles show that DPA should be beneficial and meaningful to students.

One of the guidelines suggests that DPA could be offered through daily physical education (Alberta Education). A Quality Daily Physical Education program (QDPE), which is a school program of compulsory physical education 30 minutes daily that is lead by a specialist, encompasses a wide variety of activities and encourages maximum participation, skill acquisition and personal health, would have satisfied the DPA requirements. Further research indicates

that students would have been provided with a more meaningful experience and more opportunities to be physically active (CAHPERD, 2006). While DPA provides students with the opportunity for daily physical activity, there are no caveats on how or by whom the program is delivered. Thus, it is difficult to know whether the activity provided will give students similar benefits as a PE or QDPE program.

Alberta Education (2007) recently conducted an online Daily Physical Activity Survey (n= 1025) completed by teachers and principals from 83 different schools across Alberta. The survey examined issues surrounding funding, attitudes toward DPA, resources use, and implementation factors. Of those who participated, 70% felt somewhat or very supported by Alberta Education in their efforts to implement DPA. While all schools were offered financial resources of roughly $1000 per year, only half the schools reported accessing this money. Fifty-eight percent of schools reported offering DPA through daily physical education (DPE), while 24% of respondents stated that DPA was not formally scheduled into their timetables. The survey showed some positive progress for DPA. It is important however to recognize that the study did not distinguish elementary schools from junior high schools, where obvious differences exist such as timetabling, curricular demands and teaching to a specific age group.

Educational Change

While the Alberta DPA initiative provides opportunities to help students increase their physical activity levels, it seems that implementation of the program may prove to be a difficult task. The main problem with implementing a

new program or turning an entire school around is that people typically resist change (Fullan, 2006; Fink & Stoll, 2005). An example can be seen with cardiovascular diseases (CVD). It has become fairly well known that following a healthy diet, receiving adequate exercise and the avoidance of smoking can help prevent CVD (Andersen, 2000; Whitney & Rolfes, 2005; Tremblay & Willms, 2000). However, many who partake in these negative behaviours do not change, despite the potential for major health problems and even death. Change is difficult.

There is much information regarding the positive outcomes of organizational change however the change process requires much effort from many different sectors. Relevant education change literature (Fullan, 2001; DuFour, 1991; Fink & Stoll, 2005; Sergiovanni, 2005; Darling-Hammond, 2005) suggests common themes associated with effective school reform and the implementation of change. These themes include but may not be limited to policy development, building a vision of change, sharing leadership roles, community involvement and professional development for staff.

Policy Development

Although policies and mandates are derived with good intentions, many leading educational change experts have suggested that policies and mandates will not create sufficient change (Fullan, 1993; Fullan, 2001; DuFour, 1991; Fink & Stoll, 2005; Sergiovanni, 2005; Darling-Hammond, 2005; Stoll & Fink, 1996).

Fullan states that "you can't mandate what matters" (1993, p. 23). According to Fullan (1993), change is not affected by mandates, but requires

skill, creativity and commitment to action. DuFour (1991) agrees that mandates result in minimal changes and that schools themselves are the greatest agents of change. Sergiovanni (2005) concludes that one of the problems associated with government mandates is that in the implementation, the school is often examined as an organization and seeks bureaucratic changes, such as changes in school structure which only result in short term changes within a new implementation. What mandates fail to recognize is that each school is unique and should be examined as a community where deep change relies not on mandates and policies but on variables such as teacher understanding of subject matter, teacher skill, pedagogy, and student performance.

Education change is best affected by policies that are top-down bottom-up approaches (Darling-Hammond, 2005; Fullan, 1993). The best change occurs when the larger system provides guidance, direction and support and the actual change process is left to the school through school based discussion and school developmental planning (Fink & Stoll, 2005). The more policies and mandates impose inflexible constraints, the less likely success in implementation will result and the more likely resistance will occur (Darling-Hammond; Fullan). When schools are responsible, they are able to integrate new policy development or mandates into the context of their school, where multiple innovations and policies already exist, which leads to a more successful implementation (Stoll & Fink 1996). Since mandates do not change people's beliefs, attitudes and norms, it is important that schools embrace and seek to understand new policies otherwise change is unlikely (Perez, 1999, Fullan).

Building a Vision of Change

Stoll and Fink (1996) suggest that when new changes, policies and/or mandates are initiated in schools it is important to plan and create vision of what the program should look like and how it will function within the school. The vision should be co-created among all willing school staff and the wider community. Fullan (1993) agrees and concludes that a successful vision is clear, articulated frequently, used consistently and should include shared merging of personal and group ideas.

Shared Leadership

In the majority of the education change literature it is commonly noted that the principal is the key contributor to whether change will be successful or not (DuFour, 1991; Fullan, 1993; Perez, 1999; Cherniss, 2006). When the principal is in favour of the proposed change there is a greater chance for its occurrence. Effective principals lead with support not control, encouraging participation while supporting staff (Perez). Change can be an emotionally difficult time for many, and thus a principal needs to in particular provide emotional support to their staff members (Hargreaves, 2005).

According to Fullan (2006), control and command leadership styles may work, but they will result in short term change. Instead, principals should distribute power and authority to all willing staff members (Lamperes, 2005). In doing so, there is a shared responsibility and greater lines of communication which will in turn lead to greater staff satisfaction. Fullan (1993) suggests that every person is a change agent, not just the principal. Principals create leaders

within the school by providing teachers with voice and choice and thus teachers become more interested in change because they have been made a part of the process (Perez, 1999; Cherniss, 2006).

Community Involvement

All schools fall within a larger community context. There are so many different facets and people involved in schools, that all should be involved in change (Fink & Stoll, 2005). Sanders and Epstein (2005) state that parents, community, volunteers and even businesses all help children learn and thus their involvement is essential. Lambert (2003) affirms that community involvement is more than just lunch supervision, but more like co-leadership regarding decisions surrounding new initiatives and change. When schools are treated like a community encompassing the whole, there is greater chance for lasting deep change (Sergiovanni, 2005).

Professional Development for Staff

School improvement means people improvement (DuFour, 1991). Schools spend large sums of money on teacher wages, thus it only makes sense to invest in professional development to ensure quality learning for students. A common overlooked problem arises as teachers and principals do not acquire the skills and knowledge necessary for change. It is important for teacher learning to occur before student learning (Perez, 1999).

One-shot in-services are often provided for staff development, but result in no changes in teaching practices and or student learning (Perez, 1999). Hiring

guest speakers has shown similar negative results (Fink & Stoll, 2005). According to DuFour (1991), teacher training is often seen as a "waste of time".

This may be the case for these types of in-services, however others have been successful. Lamperes (2005) found that on-going staff developmental training was successful when offered during working hours and when all staff participated together. Lambert (2003) and Fullan (1993) agree and state the importance of continuous skill development, allowing for dialogue, reflection and inquiry both as individuals and together with other staff members.

It is fairly evident that if teachers do not possess the skills and knowledge required to contribute to a new initiative, it is unlikely that change will occur, because staff will not know how to implement the changes.

Education Change at the Level of Implementation

While much of the literature surrounding educational change theory focuses on whole school reform or turn around, Fullan, a Canadian expert on educational reform, has proposed a theory of successful educational change specific to the level of implementation (2001). Fullan's implementation theory is useful in examining DPA as the initiative is not reforming the entire school, but is an added mandate that needs to be integrated and implemented into the existing school system.

Fullan (2001) has proclaimed that the dynamics of implementing change (such as a new initiative) in education are affected by 9 critical factors organized under three categories, including the characteristics of change, the local characteristics and the external factors. See Figure 2.1.

Characteristics of change include need, clarity, complexity and quality or practicality. Need refers to whether or not an innovation is seen as a necessity or priority. Research provided earlier regarding childhood overweight, obesity and physical inactivity clearly stresses the need for action toward fighting the physical inactivity/obesity epidemic. Even if there is a general agreement that change is needed, within the adopted change strategy the clarity of what principals and specifically teachers should do may not be clear (Fullan). Lack of clarity about the goals and means of a proposed change to be implemented are often a recurrent problem in the change process. Regarding DPA, the goal of the initiative is simple, to increase physical activity levels in students. While the goal is clear, the implementation strategy of teachers and principals may be a more complex issue (Fullan). Staff will be faced with questions surrounding what exactly they should do in order to increase physical activity levels. Lack of clarity can lead to anxiety and frustration to those trying to implement.

Complexity is the third factor of the characteristics of change. Complexity refers to the difficulty and extent of change required of the individuals responsible for the implementation (Fullan, 2001). In the case of DPA this would be the principal(s) and teachers. The complexity of change revolves around skills required, alteration of beliefs, teaching strategies and the use of materials (Fullan). The DPA initiative may be quite complex as classroom teachers who may not be specialized or confident in issues surrounding physical activity, health and exercise are required to lead their students in DPA.

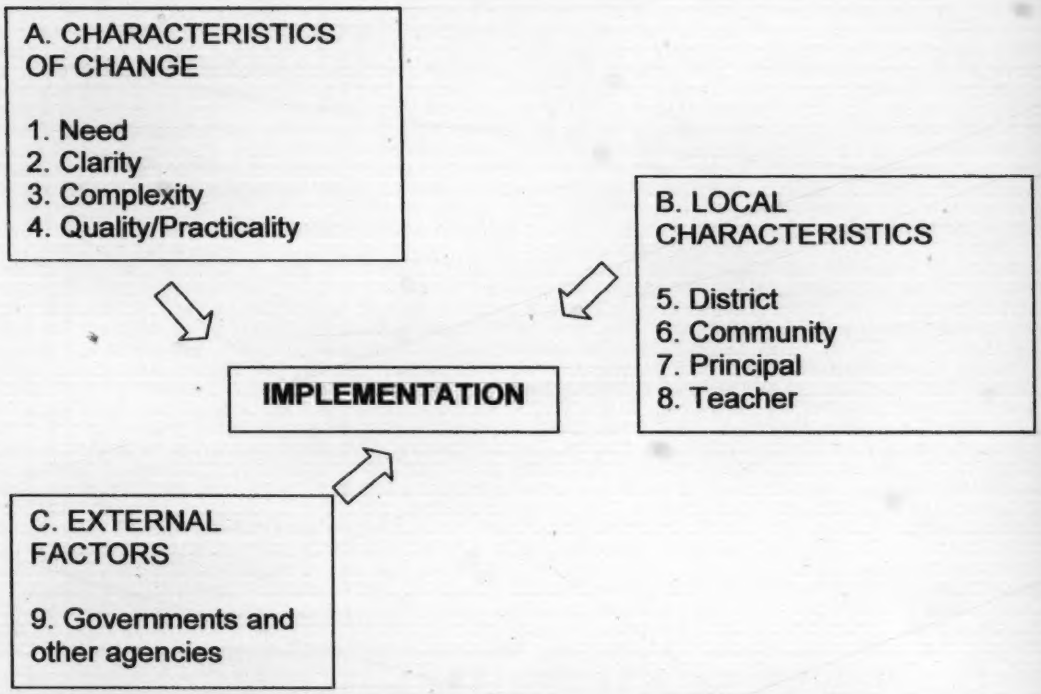

Figure 2.1. Factors affecting implementation change in education (Fullan, 2001)

Quality and practicality of the program are the last factors associated within the category of the characteristics of educational change (Fullan, 2001). Inadequate quality can result when adoption decisions are made on the grounds of political necessity or perceived need, without time for development. This may be evident with DPA as the initial announcement was made in 2003, however implementation did not commence until 2005 (Alberta Education, 2006). More planning was needed regarding how DPA would actually be put into practice (Schwartz, 2006).

The second category affecting the implementation of educational change is local characteristics (Fullan, 2001). Local characteristics include the school district, board and community characteristics, the principal and the teachers. The

support of the school district is critical for change. The chief executive officer and other key central administrators set the conditions for implementation of changes to the extent that they show specific forms of support and active knowledge and understanding of the realities of attempting to put change into practice (Fullan). Administrators affect the quality of implementation to the extent that they perceive its benefits.

Board and community characteristics are other key contributors to change. School boards can indirectly affect implementation by hiring or firing reform-oriented superintendents (Fullan, 2001). Superintendents that support and value DPA would be thus more inclined to support its implementation.

DPA also encourages community involvement in implementation and it is suggested that parents can aid in facilitating the initiative. At the local community level parents can be collaborators in educational change and most parents realize that more could be done to help students learn in the classroom (Lamperes, 2005).

The principal, the third factor affecting change at the local level, is the main agent of change in the school (Fullan, 2001; DuFour, 1991; Fullan, 1993; Perez, 1999; Cherniss, 2006; Leidle, 2005). If the principal values the program it is more likely to succeed. With respect to DPA, the principal is deemed as the school authority and therefore may be the one who establishes the manner in which DPA is implemented. According to Fullan, over the past 25 years, the majority of studies conducted have concluded that the principal is the person most likely to be in a position to shape the organizational conditions necessary

for successful change. Without the principal's involvement in an initiative it is unlikely to be successful.

The role of the teacher is the final local characteristic contributing to implementation. The teacher's role in the implementation process can be viewed at the individual or the collaborative level (Fullan, 2001). At the individual level Huberman (1988) argues that the teachers' psychological state, past experiences, efficacy and competence can all influence the outcome of successful implementation of change. This becomes extremely important in examining DPA as some literature suggests some teachers have negative feelings, attitudes and experiences in physical education and with physical activity (Hopper, 2005; Faucette, Nugent, Sallis & McKenzie, 2002).

In a qualitative research study done with training teachers, participants were asked to share their experiences in physical education (Hopper, 2005). Many stated that they were picked last on teams, were very uncoordinated, weren't sporty, hated PE and feared teaching it. Often times, teachers with low self-efficacy will avoid or not know how to teach physical education. While interviewing teachers regarding teaching physical education, Faucette and colleagues (2002) found that prior to the SPARK intervention program, teachers felt a lack of competence in teaching physical education. One participant stated that she would "rather chew on aluminum foil" than teach her own physical education classes three times per week (Faucette, et al., 2002, p. 287). The positive and negative feelings experienced by teachers in physical education contexts may transcend to teaching DPA.

At the collaborative level, the importance of teacher and principal communication is stressed as a critical component for creating change (Fullan, 2001). Fullan believes that change occurs with learning new material and strategies and that interaction is the primary basis for learning. Within the outline of DPA implementation, Alberta Education (2006) has recommended that schools create a DPA team in order to share ideas, address issues surrounding the initiative, and plan for successful implementation.

The final factors contributing to the implementation of change in education are external factors (Fullan, 2001). In Canada, this means primarily the department or ministry of education in each province, faculties of education and other regional institutions (Fullan). New policies arise from public concerns however government agencies are often pre-occupied with policy and program initiation and underestimate the problems and processes associated with implementation (Fullan).

Conclusion

The childhood overweight/obesity epidemic has become a major health concern. The literature has suggested that schools are a key target for accessing and intervening with children and youth by implementing programs to promote healthy eating and increasing levels of physical activity. In Alberta, the provincial government has mandated 30 minutes of DPA in schools grade one through 9, in an attempt to aid with the growing concern of overweight/obesity and physical inactivity.

It has been noted in the literature that more intervention studies need to be conducted in middle schools specifically (Stone, et al., 1998). DPA is occurring in middle schools, however the implementation process may prove to be more difficult as schools are faced with scheduling and timetable conflicts not present in elementary schools and students are taught by a variety of different teachers as opposed to having one classroom teacher.

Educational change literature shows that change in school can occur if it is approached correctly. By including all staff and community members in the organization and planning process of a new initiative, providing staff development opportunities, creating leadership roles, and changing school culture, new changes can have positive success. Specifically, Fullan's (2001) educational change theory may provide beneficial suggestions for junior high schools struggling with DPA implementation.

Chapter 3. Methods and Procedures

Procedures

Using a mixture of quantitative and qualitative methods of research with a case study methodology, this study proposed to further examine the change process surrounding the implementation of DPA in a junior high school by examining school documents, conducting staff and student interviews, staff surveys, and observing the routines of DPA within the school. Qualitative research methods were used in this study to provide deep understanding of DPA experiences within the school. Patton (2002) states that qualitative research findings are often used "to improve programs, deal with real problems and support concrete decisions" (p. 168).

For the purpose of this study, quantitative research methods were used to gain a broader understanding of the school teachers' feelings, roles and responsibilities associated with DPA.

This study occurred over a 7 week period in a single public junior high school during mid February through March 2008. Prior to the study, ethics approval was sought and obtained from the Faculty of Physical Education and Recreation Research Ethics Board (REB). Approval was also granted from the Cooperative Activities Program (CAPs) as well as the local Public School Board.

Prior to commencement of the study I met with the school principal to discuss the details and procedures of my study. The principal then allowed me to attend a staff meeting where I introduced myself to all staff members and explained the purpose and procedures of my study. Teachers and principals

were then provided consent forms. Student consent forms were distributed during the first week of observation during PE class. Consent for participation in the study was required from students' parent/guardians, students, teachers and principal(s). Participants received an information letter explaining the study and a consent form. Staff consent forms were either collected during observation periods, or left with the school secretary and collected by myself at the end of each day. The signed student consent forms were collected by the investigator during observation of PE classes. See appendix A for participant letters and consent forms.

Sample

In order to provide deep insight into the questions of DPA implementation, one public junior high school was purposefully (Patton, 2002) selected for the study based on the criteria of having implemented DPA showing promising practices. A local Public School Board PE school consultant familiar with the implementation of the DPA initiative helped with the selection of the school.

The school selected became the case under study. As Stake (2006) suggests,

> case study is not a methodological choice but a choice of what is to be studied...We could study it analytically or holistically, entirely by repeated measures or hermeneutically, organically or culturally, and by mixed methods- but we concentrate, at least for the time being, on the case (p. 435).

The purpose of a case is to gather comprehensive, systematic information about a case and analyze the data, which results in a case study (Patton, 2002). Thus, the case study refers to the analysis or the product of analysis of the case.

Data Collection

Data were collected from DPA documents and school observations, principal interviews, teacher interviews and surveys and student focus group interviews. Certain components lie within the boundaries of the case, while other components lie outside (Stake, 2006). The outside features, in this instance government policy, help define the context and environment of the case. Therefore, the first phase of this study examined the DPA guidelines and requirements developed by Alberta Education (2006) in order to gain further knowledge regarding the implementation procedures of the initiative from the policy itself. The principal was asked to provide the school's DPA implementation plans and documents in order to understand the procedures that had been developed by the school itself. Patton (2002) states that case studies are often layered and incorporate different units of analysis, thus making the understanding of the DPA documents an important level of analysis.

Case studies use an array of sources of information in data collection to provide in-depth, detailed analysis (Creswell, 1998). The second phase of the research program occurred at the school level and data were obtained through observation, surveying and interviewing. Figure 3.1 shows a pictorial representation of data collection methods and Table 3.1 represents the timeline in which data was collected.

Observation

Observation is a beneficial means of data collection because it gives the researcher access to information that participants may not share in an interviewing process (Patton, 2002). The researcher observed school procedures and DPA implementation by attending grade 9 PE classes, lunch time intramurals and some after school sport activities over a 7 week period.

In qualitative research, there is no specific set amount of time in which observations occur, however the duration is often bounded by time constraints (Patton, 2002). For the purpose of the time constraints relevant in this school setting, that is a January period that is not conducive to study and a March break period a 7 week time frame between mid February through March was selected.

Grade 9 classes were selected as the study cohort as in theory those students were present at the commencement of the DPA initiative two years prior. Qualitative understanding of a case requires experiencing and personally coming to know the activity of the case as it occurs in its context (Stake, 2006). During the observation period, I acted as a direct observer in this case, as opposed to a participant observer. Acting as an onlooker or direct observer allows information from observation to be separated from the information gathered during the interview process (Patton, 2002).

Patton (2002) also argues that it is an observational strength for the observer to be on the outside as they are provided the opportunity to see things that may routinely escape the awareness of those in the actual setting. The

direct observing method was used in order to ensure that I remained aware of my role as an observer.

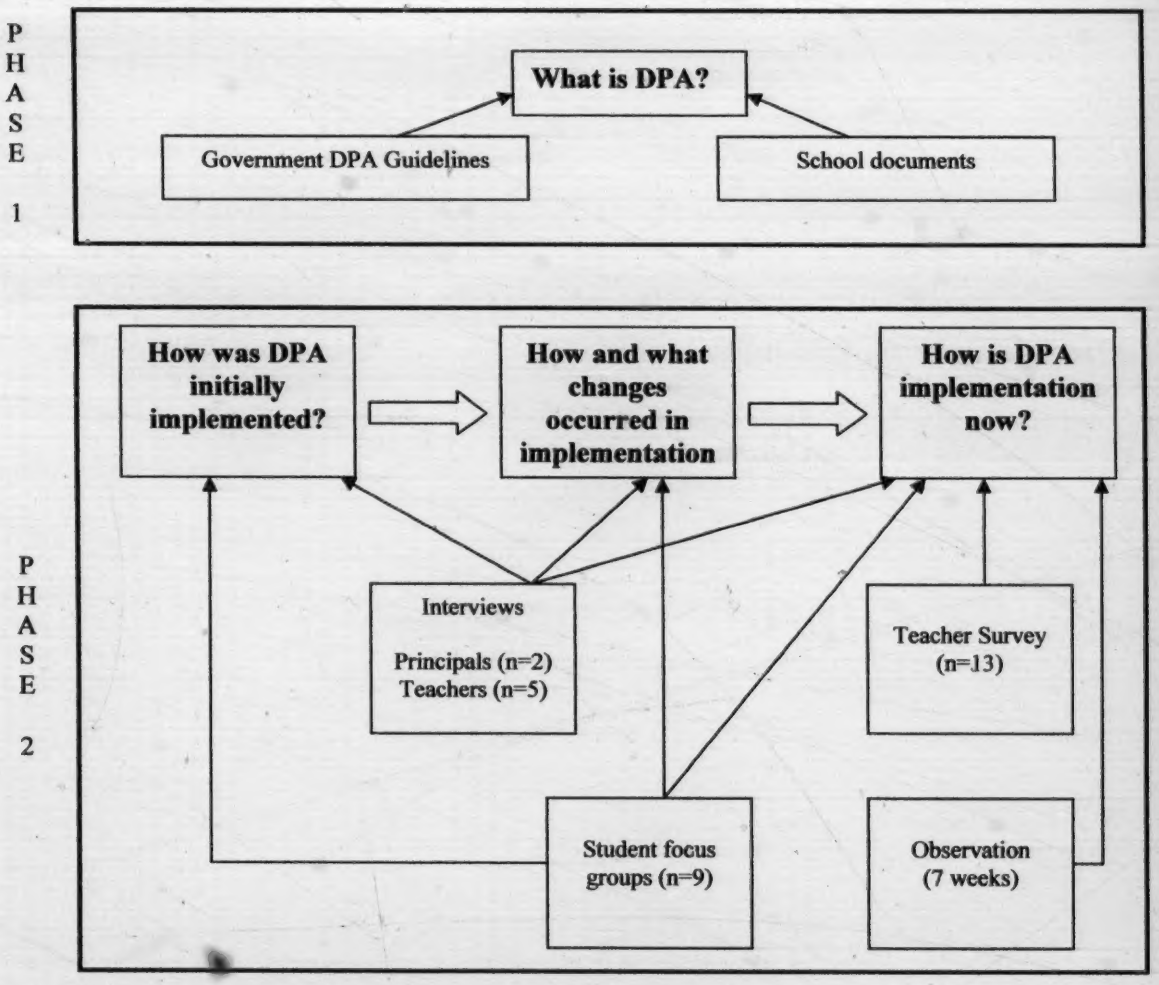

Figure 3.1 Pictorial representation of data collection methods.

According to Stake (2006), it is important for the researcher to generate a clear depiction of the case, ensuring other readers would have a comprehensible understanding of the setting. A clear description of the school setting, each classroom being observed and the daily routines and activities surrounding DPA

were collected by taking immediate handwritten descriptive, concrete and detailed field notes during each observation session. Judgments, interpretations and personal biases were included in the observations, however as suggested by Patton (2002), these entries were written in brackets in order to distinguish the actual setting from the observer's beliefs.

Table 3.1. Data collection timeline

	Week of Data collection						
Task	1	2	3	4	5	6	7
Desensitizing period							
Observations							
Teacher surveys							
Teacher interviews							
Principal interviews							
Student focus groups							

Before formal observation and note taking occurred, during the first week of the observation period, I attended all grade 9 PE classes and intramurals allowing students and teachers to become aware of my presence. The following 6 weeks of observation were spent observing the grade 9 classes during their PE periods in the gymnasiums. Classes observed included 9a, 9b and 9c as well as the interactions classes. The interactions classes were autism classes and both interactions 1 (non-verbal) and interactions 2 (verbal and higher functioning) had

grade 9 students. Table 3.2 represents the classes and activities observed based on the day of the week.

Table 3.2 Observed Physical Activities

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Observed classes	• Interactions1 • interactions2 • intramurals • (afterschool school activities)	• interactions1 • interactions2 • intramurals • (afterschool school activities)	• interactions1 • 9a • 9b • 9c • Intramurals • (afterschool school activities)	• 9a • 9b • 9c • Intramurals • (afterschool school activities)	• 9a • 9b • 9c • Intramurals • (afterschool school activities)

Interviews

The interview is essential to case study research as it reveals information about the case that could not have been retrieved from the observation period (Stake, 2006). Interview questions surrounded DPA and the changes that arose in the school during the implementation of the policy and were guided by Fullan's (2001) implementation theory. Questions posed to the principals probed their perceived values of physical activity and DPA, models of implementation, school policies, the facilitation of change and issues surrounding budget and resources. A similar interview guide was used to interview the teachers, however questions were altered slightly and include probes about personal values of physical activity and DPA, opinions surrounding the proposed model of implementation, struggles and successes throughout implementation, students and DPA and changes in the implementation strategy.

All interview guides were developed prior to sample selection in order to ensure data collection was consistent for all participants (Patton, 2002). A semi-structured approach was used to interview participants. The semi-structured interview combines the unstructured interview, where no questions are predetermined but arise within conversation, with the structured interview, where questions are pre-planned and followed sequentially (Patton, 2002). The semi-structured interview guide was used in order to ensure that all relevant questions were posed and answered by each participant, but also to allow room for additional questions to arise and conversation to flow potentially leading to a deeper understanding or further explanation of the participants' experiences. Interviews were recorded using a small Dictaphone. See appendix B for all interview guides.

While there is no specific number relevant to how many interviews should be included in a qualitative study, several sources suggest that when the interviewer reaches data saturation, the interviewing process is finished (Patton, 2002; Stake, 2006; Seidman, 1991). It is difficult to predict when data saturation will occur, however other qualitative research in physical education and activity settings found that interviewing 2 to 8 teachers provided sufficient information for analysis (Daly & Edwards, 2001; Faucette et. al., 2002; Hodge, Ammah, Casebolt, Lamaster, & O'Sullivan, 2004). In this study themes revealed by staff members became repetitive during the third and fourth staff interview, therefore after the seventh staff interview I believe that data saturation had been reached.

Teacher interviews included the five teachers responsible for providing any kind of physical activity to grade 9 students, whether it was PE, lunch time intramurals or after school sports. Teacher interview selection was based on those who fit the previous condition. Teacher interviews began in the fourth week of data collection and were scheduled for the following three weeks based on the availability of the individual teachers. Teacher interview times ranged from 24 to 45 minutes and took place in either a classroom, teacher office and in one case at a local swimming pool.

During the final two weeks of the observation period, the principal and the vice-principal were interviewed. These interviews lasted 35 to 40 minutes and were conducted in the principals' offices. Prior to the interview teacher and principal participants were reminded of confidentiality and asked to complete a short demographic information page. Using pseudo names, Table 3.3 represents the interviewed staffs' demographics.

Student focus groups were conducted during the last two weeks of data collection. The main objective of interviewing focus groups is to get participants to hear each other's comments beyond their own responses and make additional comments based on what others have said (Patton, 2002). Focus groups can provide enhanced data as participants share information and validate or oppose others' viewpoints (Krueger and Casey, 2000).

Patton (2002) suggests that focus groups range from six to 10 participants and last one to two hours. Krueger and Casey (2000) agree, however state that while interviewing children and youth in focus groups, smaller number of

participants should be used and the interview should take no longer than an hour. Smaller groups are easier to manage and keep on track, while a shorter time frame prevents boredom. For these reasons, student focus groups consisted of four students and interviewees were informed that the focus group would last no longer than 30 minutes.

Table 3.3. Glendale Staff Teaching demographics

Staff	Years as principal at Glendale	Total years spent as principal	Years taught at Glendale	Total years as a teacher	Major subject areas taught	Subject areas previously taught	Ed. back-ground
Dave Hilton	3.5	7.5	n/a	25.5	Math	Social studies, English, Special Ed	B.Ed M.Ed (Admin)
Ken Smithson	2 (assistant)	2	2	8	Math	PE, math, science	BA (science) PE + math minors
Julie Wells	n/a	n/a	4	10	PE	PE, career and health management, math	BA (PE + history) B.Ed
Gary Mackenzie	n/a	n/a	3	24	Science, PE	Science, auto, math, English, PE	BSC, B.Ed
Jim Ripley	n/a	n/a	6	12	Inter-actions2	Behaviour disorders (BD)	B.PE, B.Ed
Karen Hail	n/a	n/a	5 months	1	Inter-actions1	ELA	B.Ed (ELA) Special ed. minor
Robert Nichols	n/a	n/a	7	22	Social studies, history	English, science, PE	B.Ed M.Ed

Two student focus groups were initially selected for interviewing. While there is no predictable number of focus groups to include in a case study, other research including high school student focus groups have used similar numbers (Jones & Cheetham, 2001). Students eligible for focus groups were those in grade 9 who obtained signed consent from a parent or guardian and had been at the school since DPA was initiated in their grade 7 year. Students were provided consent forms on the first day of data collection and several were provided additional forms because they had misplaced or lost their original. Students were provided constant reminders by myself and by the PE teacher to return signed consent forms. Consent forms were collected throughout the first 6 weeks of data collection. Thirty two signed parent/guardians consent were returned.

Students were selected at random to participate in focus groups. Eight students were listed for focus group one. I asked the first four students on the list if they would like to participate in the focus group. One of the original four did not wish to participate, therefore the 5th student was asked and agreed to take part. The first focus group consisted of three girls. One girl forgot to meet. The same process was used for the second focus group. Eight students were listed and the first four were asked to participate. The first two asked did not wish to participate, but the third, fourth, fifth and sixth all agreed to contribute. The second focus group consisted of 3 boys and 1 girl. The interviews took place during the first half of the lunch period. Student focus groups were conducted in the conference room at school. Students were reminded of confidentiality, the option to drop out and the procedures for participating in a focus group interview. Students were

then asked to provide signed consent before the interview began. Focus groups lasted from 17 to 24 minutes.

Focus groups should include participants with similar backgrounds in regard to the questions being posed (Krueger & Casey, 2000). In these focus groups, all students have experienced DPA throughout grades seven, eight and nine at the same school. While it has also been suggested that those in the focus group should not know the other members, given the school setting, this was not possible.

While the study only proposed to interview two focus groups, an additional student interview group was included in the data collection. In one grade 9 class (9a) there were only four students who had been attending Glendale since grade 7. None of these students returned signed parental consent, thus no students met the interview criteria. Only two students from 9a returned signed parental consent, both of whom had just started attending Glendale this year. While these students did not meet the criteria, I felt that they represented a different population at Glendale school and that their input would be valuable and essential to the study. Therefore these two students were selected purposefully and interviewed together. The interviewing process was the same as the other two focus groups however these students were not asked questions pertaining to grade 7 and 8.

Surveys

Quantitative surveys were given to all teachers in the schools who provided written consent in order to get a sense of attitudes, beliefs, roles and

actions related to DPA in the school. Surveys occurred at the monthly staff meeting to ensure that all teachers had the opportunity to participate. Surveys took place in the staff lunch room and took 5 minutes to complete. Fourteen questions were posed based on teachers' beliefs about DPA, their current implementation processes, the clarity of their role, and their beliefs about the principal's role. Responses to questions one through 12 were based on a 5-point Likert scale (1 strongly disagree to 5 strongly agree). Questions 13 and 14 required teachers to circle the answer that best applied based on the length of time (in minutes) their DPA teaching sessions lasted and how many days per week (1 to 5) these DPA sessions were taught. In total, 13 people participated in the survey (11 teachers and two Educational Assistant (EA) teachers). Three teachers were absent for the meeting and did not complete a survey. See Appendix C for teacher survey.

Trustworthiness

According to Lincoln and Guba (1985) trustworthiness is the qualitative equivalent of validity and reliability. In qualitative research trustworthiness reflects four concepts: dependability, credibility, transferability and confirmability.

Dependability refers to the ability to understand where the data in a study comes from, how it was collected and how it was used (Lincoln & Guba, 1985). One way to achieve dependability is with an audit trail. This was done by taking separate notes in a journal of all processes completed within the study. The researcher also took notes on personal thoughts outside of what was actually

being said and observed. This helped to differentiate between observations and personal biases that arose.

Credibility means believability (Lincoln & Guba, 1985). Credibility is established by spending a prolonged period of time with the individuals under study. I was in the school for 7 weeks. Credibility can also be established through triangulation (Lincoln & Guba, 1985). Credibility improves if multiple sources of data reveal the same information (Shank, 2006). Data derived from observations, interviews and teacher surveys was triangulated.

While generalizability is not possible in qualitative research (Lincoln & Guba, 1985), providing adequate detailed information may provide transferability, where research can be transferred to a different setting or a different population. I attempted to provide ample detail within the study to ensure that a diligent reader would be able to decide if the study could be transferred (Shank, 2006).

Confirmability deals with the details of the methodological processes used (Shank, 2006). The details of the methodologies used are clear and concise to ensure that data gathering and analysis could be understood by another person outside of the study. For this study, I was also in contact with other members of my thesis committee and the PE consultant who chose the school to discuss and evaluate if the themes that have been derived during the content analyses were relevant and accurate.

Prior to data collection, I read literature regarding interviewing strategies and had also been taught proper interviewing techniques in a qualitative graduate level course at the University of Alberta. Teacher interview guides and

surveys were examined by two teachers excluded from the study to ensure questions were logical and understandable. Two pilot interviews were also conducted on outsiders prior to interviewing the participants of the actual study. These interviews were conducted to practice interview skills and to ensure that questions posed were logical.

Using the interviewer/observer as an instrument of validity also applied to this study. In qualitative research, the quality of the data collected often depends on the understanding, experiences and abilities of the researcher (Patton, 2002). I have degrees in physical education and in education and have much experience in different school settings such as: teaching, tutoring and volunteer work, and thus insight in how schools operate. I have conducted student focus groups with groups of four to six students in past teaching experiences. Having experience in schools provided the added benefit of understanding and being able to relate to aspects of the school under study.

Data Analysis

All qualitative data were transcribed to electronic files and was then subject to a content analysis upon completion (Tesch, 1990). Since qualitative research typically follows an inductive approach, as opposed to deductive research where predictions are made to examine specific hypothesized concepts, it was difficult to determine how data would be analyzed specifically, because I could not predict what the documents would suggest, what I would see in observations, or what interviewees would say (Patton, 2002; Seidman, 1991).

Content analysis was done by selecting one transcribed case document at a time (one document, one interview or one day of observation) and reading it and picking out relevant topics and or themes that possessed significant meanings (Morse & Field, 1995). While reading and assessing each line, all visible categories were highlighted, recorded in the margins of the transcribed document and named accordingly based on their content. For each category an essence phrase was created to determine the information that each encompassed. An example of an essence phrase is: "this theme reflects any comments that reveal that the school has not changed its practices to encompass the DPA initiative."

After reading three teacher interview documents, the coding process became mostly deductive as I searched for similar themes derived from the first few interviews read. Both inductive and deductive analysis continued as I coded principal and focus group interviews. Observation coding followed a similar process beginning with the first week of observation being coded inductively, followed by deductive coding the following weeks. Throughout the process, categories and sub-themes were constantly evaluated, re-named and grouped with others if similarities prevail (Morse & Field, 1995). Originally, observation and interview material together yielded 17 themes, each with two to four sub-themes. Following the first round of coding, I examined all documents a second time and scrutinized the themes and sub-themes that had been created. From this second round of coding I was able to condense and eliminate themes that may not have been as prevalent or relevant in the study. These results narrowed

my themes down to 13. A third round of coding followed the same procedure and resulted in 7 final themes.

Documents

The first documents examined were those provided by Alberta Education (2006) describing DPA and its objectives and proposed procedures. These documents were examined in order to provide the context for what DPA is and how it should be implemented.

The principal was asked to provide documentation regarding DPA implementation plans however it was revealed to me that beyond the PE and intramural schedules, there were no specific written documents for the initiative itself.

Interviews

After completing the individual and focus group interviews, the researcher transcribed the interviews verbatim. Transcribing word for word is done because there can be no substitute for what people actually say in an interview and therefore the best analysis will be derived straight from participants' words (Patton, 2002). After transcription, a content analysis of all interviews was done using an inductive-deductive approach. The interview analysis was conducted prior to the observation analysis to ensure that any biases derived in observation notes were not reflected in interview transcripts.

All interviews at each individual level (administration, teacher, student) were read initially to get a sense of the whole group. Following this, each interview was reread, categorized and coded. Interview guides were subject to

three rounds of coding to ensure that themes made sense and were relevant to the study. After all themes and sub-themes were created, another individual involved in the study verified the categories to ensure that they were valid.

Observation

Data analyses of the observations followed a similar pattern. After each observation day, electronic files were created from the hand written notes taken at the school. Content analysis followed the inductive-deductive approach. Data saturation from observation was reached early in the observation period. Therefore the switch to deductive content analysis for both interaction classes occurred during week two and for the other grade 9 classes this occurred during the third week.

Survey

The data derived from the survey were analyzed quantitatively using descriptive statistics including means, standard deviations and ranges, and were used to triangulate data findings.

After all content analyses were conducted, all data were examined as a whole and organized as descriptive summaries and thematic narratives relevant to understanding the process of how DPA has come to be implemented.

Chapter 4. Results

DPA at the Government Level

In 2003 the Alberta government announced its plan to implement a daily physical activity (DPA) initiative in all Alberta schools. By 2005 schools were mandated to provide students in grades one through 9 with 30 minutes of daily physical activity through a variety of activities. The policy allowed school authorities to decide the way in which DPA would be implemented based on the unique aspects present in each school.

Alberta Education created a DPA handbook which provided schools with the DPA policy statement, the requirements and guiding principles for school administration and teachers to access. While there is flexibility for school DPA implementation plans, guiding principles were provided in the handbook in order to aid schools in the development of the implementation process. These guidelines, provided in the first chapter, showed that activity should be meaningful by suggesting that daily physical activities should, a) vary in form and intensity, b) take into account each student's ability, c) consider resources available within the school and the larger community and d) allow for student choice. The policy also included other ideas for incorporating DPA into the school curriculum such as having the 30 minute period split into two 15 minute time blocks or having DPA requirements met through physical education (PE) classes.

The following chapters of the handbook provided teachers and administrators information and resources to aid in the implementation of DPA.

Resource material includes physical activity resources such as physical activity ideas in different settings, including community, small spaces or classrooms, and both outdoor and gymnasium spaces. In addition planning class activities and whole school activities and stretching exercises are included in the resource material. The handbook also provides several organizer pages to frame the vision of DPA, such as teacher reflection, DPA implementation goals, strategies and action plans (Alberta Education, 2006).

Aside from the handbook, other resources, such as timetables incorporating DPA and professional development sessions lead by physical education consultants, were available through Alberta Education and other school physical activity organizations such as Ever Active Kids (2007). Alberta Education (2007) provided teachers with $1020 in 2006 and $1051 in 2007 to use for DPA implementation. In 2004-2005 in collaboration with the organization Schools Come Alive, Alberta Education also provided 257 DPA related professional development opportunities offered to teachers across the province (Alberta Education, 2007). Results from the DPA documents provided by Alberta Education show that schools were provided with guiding principles and resources to implement the mandate.

DPA at the School Level

Based on the guidelines proposed by Alberta Education (2006), the purpose of this study was to examine how a junior high school could change existing school protocol to incorporate the DPA mandate. Glendale school was purposefully selected by a PE consultant with the local public school board as a

junior high school that showed changes for and promising practices of DPA. However, after spending 7 weeks at the school observing, it was evident that DPA did not exist to the intended capacity mandated by the government. Reports from Alberta Education (2007) reveal that this school reported DPA as PE, intramurals and extracurricular activities. This was an accurate reflection of how they were complying, however beyond three weekly PE classes not all students were participating in all activities offered, thus not all students were receiving 30 minutes of physical activity daily.

The findings of this study showed that the staff at Glendale felt that in theory DPA was a positive initiative however barriers hindered its implementation and prevented the school from providing DPA to its intended capacity. The staff at Glendale perceive that they provide above adequate opportunities for students to be physically active and therefore they didn't make many changes to their existing practices to suit the mandated initiative.

The school principal, Mr. Hilton, confirmed this when I asked him if he thought his school was successful at implementing DPA. He responded by saying:

> ...we've been given an impossible task...and it frustrates me...I look at what we're doing here and...we're doing as much if not more than other schools...I think we're above par, I think we're doing a great job with what we are doing, but as far as implementing daily physical activity, no.

The assistant principal, Mr. Smithson, said

> I don't really like the way that the initiative has been brought forth…in its implementation I wasn't really that impressed.... I do think it's honourable that they're deciding to say that you know we really need to look at physical activity.

When I asked him if he thought Glendale was successful at implementing DPA he went on to say "in terms of what the mandate says so, no, no, um, in terms of what we can do as a school this size and still value academia and that, absolutely!"

Observations and comments by the principals demonstrated that DPA was not being fully mandated. Results did however show that PA was valued at the school and the majority of staff and students participating in this study were pleased with the existing school protocol. This will be reflected in the following sections.

The following results are presented in four overarching sections, each with its own themes and sub-themes. The first section: *Glendale Junior Public High School*, provides the first theme, the context of the case in a school description. Section 2: *The Change Process* encompasses three themes including: no perceived changes, barriers to implementation and change did happen. Section 3: *Current DPA practices*, discusses the themes of promising practices and the students' responses and behaviours, and finally section 4: *Where do we go from here*, highlights the theme: future improvements.

Section 1: Glendale Public Junior High School

Providing the context of the case is an essential part of the case study as it provides the reader with the ability to understand and make meaning of the results based on the setting in which they exist (Merriam, 1997). Since "well-constructed case studies are holistic and context sensitive..." (Patton, 2002, pg. 447), the first section focuses on the school itself and provides thick descriptions of a typical day, socioeconomic status and teaching programs at Glendale, and the school layout, before narrowing the scope of the contextual description to time and space for physical activity and physical education, extra-curricular and intramural activities.

Theme: The Context

When I arrive at Glendale Junior High School on my first day of data collection I am greeted at the front door by the principal, Mr. Hilton. I soon learn that this is a daily occurrence for the 300 students, 16 teachers and 6 Educational Assistant (EA) teachers that attend and work at Glendale Public School. This school is older, dating back to the 1950s and as I walk into the front entrance I see the old class photos from past decades that hang on the hallway walls. Surrounded by these photos are student honour roll lists, student art work and the school's teaching focus and mission statements.

With the exception of one, all of the school's hallways have lockers where students swarm before classes. I walk through the hallways where students are chatting, getting books together, closing up their lockers and hugging their friends before heading off to their first class of the day. Among these 12 to 14 year olds

it is fairly common to see boys with mini Mohawks, girls wearing skinny jeans, colourful hair dye, braces, pimples and messy lockers.

Before the 8:35am bell rings I make my way into the main office where the principal and vice-principals' offices are located and where two secretaries work. A few minutes after the bell rings the principal starts the school announcements by asking all students and teachers to rise for the national anthem. Following Oh Canada Mr. Hilton reminds the girls' basketball team that there is a luncheon today in room 12 and then moves onto wishing Olivia Smith in grade 8 a happy birthday. Later while traversing the school halls I see a locker decorated with gift wrap and streamers and a card that reads happy birthday Olivia, with student signatures covering any open space. The school announcements conclude with Mr. Hilton wishing everyone a great day.

After announcements the students begin the first of 6 periods that day. Each class is 52 minutes long. In between each class, students have a five minute break where they head to their lockers, chat again with friends, exchange binders and then head to the next class. After period four there is a 48 minute lunch break. With the exception of Wednesdays where students have early dismissal at 2:05 and teachers have school meetings, the bell rings at 3:05 and students are dismissed for the day.

Socioeconomic status and teaching programs at Glendale. While the school is considered to be inner city, because of its location within the large Albertan city, the socio-economical status (SES) of students varies dramatically. This is in part due to the unique Spanish immersion program offered at this

school. It is the only public junior high school in the region that offers this program and therefore draws in students from all over the city, including outside inhabitants. Some students in the Spanish immersion program at Glendale were introduced to the language at an early age while attending the immersion pre-school that is located in one wing of the school. It is quite evident that the language program is valued at this school as I hear students speaking fluent Spanish in the hallways.

Each grade 7 through 9 has three different classes, a, b and c. In addition to having the Spanish immersion program, this school offers classes of two different teaching and learning styles. The "b" and "c" classes are in the Cogito program, a teacher directed program focusing on whole group learning (Edmonton Public Schools, 2008). In this program all students are taught in the same way, the curriculum progresses as planned and teachers can rely heavily on parental support, encouragement and discipline. These classes have between 27 and 32 students. Students in the "a" classes follow traditional teaching where the teacher progresses with the curriculum as the students learn. The traditional class appears to rely less on parental support and encouragement. These classes have fewer students, the 9a class having only 16.

Mr. Hilton has informed me that many students in the "a" classes come from single parent families with low SES, unsupportive parents, and also include students who live in group homes and others who have already been in trouble with drugs and the law. Mr. Hilton informs me that these students are typically less involved in school work and extracurricular activities and chronic absences

are fairly normal. The "b" and "c" classes typically encompass students of middle and upper class, and students and parents who are more involved in school life. Parents, with the student's consent, choose which program their child/children will be enrolled, however the school may provide insight or suggestions as to where the student will have the most success.

The school also has two autism interaction programs. The first is for lower functioning/non-verbal students and has 10 students, one teacher and four EA teachers. The second interaction class is for higher functioning/verbal students with autism and has 6 students and one teacher. This class also has students who are integrated and attend the some other classes with an EA teacher. Students in these classes range from grades 7 through to 9 age range.

School layout. The school is small; there are 34 different rooms. Glendale School provides the mandatory classes of language arts, social studies, math, fine arts, physical education and science; students also choose two elective courses. There are several electives to choose from including: band (jazz band, guitar band or acoustics band), cooking and foods, construction and woodworking, study/extra help class, French, outdoor education or drama.

The school also has both staff and student lunch rooms, a library and two gymnasiums. The student lunch room is available for all grades, but is where many grade 7 students eat over the 48 minute lunch period. Grade 7 students are the only grade not permitted to leave school property over lunch. On the warmer days the older students walk to nearby fast food chains or buy homemade cookies from the small store down the street. In the lunch room there

are roughly 20 new picnic tables on wheels and two microwaves for student use. During the non-lunch period these tables are lifted upright and put to the side and the lunch room is used mainly as a hallway to get to the back end of the school.

Interestingly, this lunch room may have once been used for activity. There are lines painted on the floor and metal fencing over the windows on the doors. Although the room is not nearly large enough to hold a full class it is spacious enough for activity of a dozen students.

Time and space for physical activity. While Glendale is an older school, it is fortunate to have two gymnasiums. The small gym is found at the front of the school. The small gym is just large enough to fit a volleyball court. This gym also has a curtained stage at one end used for school performances and assemblies. There is a small equipment room within the gym containing scooters, deflated basketballs, foam balls, tires, wrestling mats and bits of other equipment. There are basketball nets at either end of the gym and the floors have old faded lines painted to show boundaries and courts for a variety of sports. This gym is used for physical education classes and for some after school sport practices however its size makes it less popular among both students and teachers in the school.

The large gym is found on the other side of the school and is the preferred of the two gyms. Although it is still fairly small, it is much bigger than the small gym and teachers have enough room to put up three badminton or volleyball nets lengthwise. There are six basketball nets in this gym, two at the ends of the gym that are used for the school basketball games and then 4 nets on the side walls. There are also shot clocks for basketball and an electronic score board hanging

in one of the corners of the gym. This gym also has the old painted lines on the floor, that in some cases are difficult to see. On the far wall there are small numbers on white pieces of laminated paper ranging from one to 35. These numbers are used to take student attendance in physical education class by having students stand under their numbers, allowing teachers to move down their attendance sheet to see who is absent. Mrs. Wells tells me attendance is much faster this way and saves more time for activity.

In the corner of the large gym there are volleyball nets in a stand and to the side of these nets there is an equipment room. The equipment room in the large gym is stocked with much more and better quality equipment than the small gym. There are many basketballs, volleyballs, sets of floor hockey equipment, and brand new badminton sets available to use.

The teachers prefer the large gym because of its size and the ability to have more efficient physical education classes. The students prefer this gym for a different reason. At Glendale students are required to change for physical education and the change rooms are in the big gym. Students thus do not have to change and then go to the other side of the school for classes in the small gym.

If this school was located in a warmer climate, space for physical activity would never be an issue. Glendale is very fortunate to have a variety of outdoor spaces available for use. The school property includes two soccer fields, four baseball diamonds, two tennis courts, a basketball court and two boarded skating

rinks. The school is also in close proximity to a local swimming pool and community centre.

Physical education, extra-curricular and intramural activities. Glendale school provides all students with 52 minute scheduled physical education (PE) classes three times weekly. These classes are held in both small and large gyms and occasionally outdoors. Both the interaction programs offer daily PE in the small gym. The interaction programs also make weekly use of a near by swimming pool and take daily walks around the neighbourhood.

For a smaller school, Glendale offers its students many opportunities to get involved in extracurricular activities outside of class time. The school offers a variety of different clubs, including a drama club, dart club and chess club, student council and band. The school has an intramural program that runs at lunch and includes different activities in which students take part. Intramurals are organized and supervised by Mrs. Wells and Mr. Nichols and student participation is voluntary. This year activities have included dodge-ball, four on four basketball, Sticks tournaments and badminton. The gym is typically open and supervised by Mr. Smithson three mornings a week for use where students typically play basketball.

Interschool sports teams are also available to students at Glendale. Throughout the school year students can try out for basketball (girls' senior, boys' junior or senior), junior or senior girls or boys volleyball, track and field, single or doubles badminton, slow pitch, cross country running, the Cheer team or the girls or boys soccer team. These teams are coached by school PE teachers and

coaching staff however some teams have community members such as high school students or parents acting as coaches, while the principals or teachers provide the supervisory role for the team.

Section 2: The Change Process for DPA

At the time of the study, DPA at Glendale was offered through physical education classes three times per week, lunch time intramurals, open gym time in the morning before school and through a variety of extra-curricular activities offered. It is important to note that while there is a difference between DPA, PE and sport, staff and students used these words interchangeably to represent the same meaning. This may be due to the lack of a specific DPA plan. PE or sports were also used when describing DPA activities.

Emerging as the first theme in this section is *No perceived changes to encompass DPA*. This theme reflects the lack of daily PA and the perception that the school did not make changes in the school protocol to accommodate the DPA mandate. The second theme: *Barriers to implementation* highlights potential reasons for the lack of change for DPA and includes four sub-themes: the perception of DPA, irritated with the government, curricular conflicts and finding the time and space. While several students and teachers stated that the school had not made any changes for DPA the final theme in this section entitled C*hanges made* reflects some changes that have occurred since the DPA mandate was initiated.

Theme: No Perceived Changes to Encompass DPA Initiative

After observing at Glendale the first week it became quickly evident that students were not receiving DPA. Students confirmed the lack of daily activity when I asked the focus groups if they got daily physical activity and Sara sarcastically replied "only if it's a gym day". Steve, a student from another focus group said "I think, that's the thing you get physical activity but I don't think you get not enough and not daily". Adan went on to say "...well like we get gym three times a week, Wednesday, Thursday and Friday, but that's it." Charles followed by adding "well unless you play on a team." Focus groups confirmed that unless students are attending intramurals at lunch or playing on a school team that has practices or games on Monday and Tuesday, they are not getting daily activity at school. My observation notes also noted that some days there were no intramurals at lunch. On occasion the students would wait outside the large gymnasium doors hoping for a game or open gym time and would be disappointed when no one would show up to unlock the doors.

In addition to not receiving PA daily, it was confirmed through interviews that the staff and students perceived that since the initiation of the DPA initiative, the school had not made any significant changes to encompass the mandate. When asked if physical activity has changed over the course of three years, one student replied "I think, the only big difference is who's coaching the teams. Right and...really what teams there are and how much you're learning and who's teaching."

Further, several teachers mentioned in interviews that since the initiation of the DPA initiative there have been no changes at Glendale. Mrs. Wells said "nothing has changed, like we're still doing physed three times a week, like they didn't wanna look at doing it 5 days a week at all." She went on to say: "I do know that it hasn't changed, like this is my fourth year here and it's been the same for 4 years, there's been 3 classes a week for 52 minutes..."

Assistant principal Mr. Smithson also confirmed the lack of change and stated "I think things are done very much the way they were done in the past. It hasn't changed..."

Mr. Nichols recognized that at the beginning of the implementation Glendale did not make major changes for DPA and said: "we saw the vision...of the initiative...so there was initial information, but...yeah it was introduced to us, but ...aside from the way we attacked it initially we didn't do much more with it then." He continued to say: "I felt at the time that ah, ah it really did not go much further than we will address the initiative by upping the physed minutes and leaving it within the physed department. Um, and we will incorporate intramurals, we'd been doing that anyway." After discussing this point with other staff members it was confirmed that the minutes in PE were not increased, however teachers were encouraged and did attempt to augment the amount of time students spent in activity, while decreasing the time spent standing or sitting around during physed class.

The lack of major change for DPA may be in part due to the fact that staff felt or were informed that they already met the DPA guidelines, therefore the

need to make changes was not necessary. This is reflected both in the above comment by Mr. Nichols and by Mrs. Wells in the following quote: "you know what it [DPA] could have been mentioned [at a staff meeting] as something new that is happening and we already meet it and so we're just going to keep going along with it."

Theme: Barriers to Implementation

The second theme in section 2: *Barriers to Implementation* provides further insight into the implementation obstacles encountered at Glendale. These barriers may help to further understand why Glendale did not make major changes to school protocol and are presented in four sub-themes including: The perception of DPA, Irritation with the government, Curricular conflicts and Finding the time and space.

The perception of DPA. In all of the staff interviews conducted it was clearly evident that teachers and principals felt that getting daily physical activity was very important for healthy active living. In several interviews however staff members discussed the proposed DPA as lacking meaning or quality or not being "true physical activity" (Mr. Nichols). The perception of DPA in these cases came across as negative.

The school principal, Mr. Hilton, made comments referring to the quality of DPA and compared good valuable PE to "...these other kind of silly times that they'd [the students] get in the gym run four laps get into the change room and get ready and get back to class, you know, here's a ball bounce it- ok done! <laugh>." This quote shows that the principal's perception of DPA activities

would not be valuable to students. This was also evident when he referred to potential DPA activities as something "like walking around the classroom you know holding hands, you know stepping sideways." The principal's negative perception of what DPA activities would be may be contributing to the lack of implementation.

Other teachers expressed similar views as Mr. Hilton. In discussing the DPA document Mr. Mackenzie showed that he too felt that the DPA activities were questionable when he said: "Um, there were all these objectives catching balls to balancing spoons on your nose and everybody was going like oh my god one more thing, what the heck is this stuff?..." Mr. Mackenzie felt that these objectives weren't necessarily actual physical activity.

Mr. Nichols expressed similar concerns when discussing DPA at his daughter's school. He said

> [My daughter's class] goes tobogganing or something like that that you know, for twenty minutes, it's ok perhaps, but...you know walking around the halls around the schools for twenty minutes, I would rather see them in the class, in class having some really structured activities that are meaningful. I'm afraid that there are just a lot of meaningless...time filling activities that are not addressing the initiative, and it's...window dressing instead of true physical activity and that's frustrating for me.

While the idea of DPA is to increase students' physical activity levels, it seems that many have perceived DPA as less than meaningful physical activity. The mandate guidelines show that DPA should be beneficial and meaningful to

students as it should be implemented by providing activities in a variety of forms and intensities, considering each student's ability, using resources available within the school and the larger community and allowing for student choice (Alberta Education, 2006). Outside of PE, intramural and extracurricular activities the perception of DPA activities however have come across as meaningless.

Irritated with the government. Several staff members expressed negative feelings toward government practices. In some case these feelings seemed to be based on prior experiences in dealing with governmental issues. While discussing the DPA document Mr. Mackenzie showed irritation toward the government in saying:

> ...you see that's background of one more government document, oh God here we go...one more thing because the last ten years have been a lot of those one more things. So, there was...always that kind of negative thing in the background anyways. Before the initiative was even introduced, there was that negative mind set. So when it came in and of course people see the size of the education document and went "oh my God! What is going on here?!" So- it was negative.

Other negative comments were made regarding the government's lack of planning and organization. Mr. Smithson said "I don't think that enough thought...it's a great initiative, but there hasn't been enough foundational thought going into the structural...and the foundation is not there to provide for it..." He also mentioned the crowding of government initiatives and changes in schools, saying:

I don't really like the way that the initiative has been brought forth and an and in its implementation I wasn't really that impressed…I think that you know not only do they have daily physical activity and that, that's just one government initiative, there's also more government initiatives with sciences, they've got added new curriculum, in math they're changing the curriculum, they're adding to the social studies curriculum, I think there's only so many hours that you have in a day…you know they have to also look and at where are we going to compromise…I don't think they're doing a good job of that.

Mr. Hilton expressed similar viewpoints by saying

…if we are mandated to do it and we're also mandated with other restrictions…here we go with our government lack of planning and lack of understanding…when they implement something without taking into consideration how are we going to do this? It comes onto the schools and we just go, well sorry we just can't do it.

Mr. Nichols suggested that the lack of initial planning by the government may be why schools are struggling with DPA

…it would have been nice to have extra bit of planning right from the beginning, and…I know they probably did some trial programs in schools and had people, take it on eagerly, but…it sure hasn't spread like wildfire to the rest of the…schools and I'm afraid its become kind of a…in many schools kind of a dead issue.

Along with a lack of governmental support, another problem discussed was financial resources. Mr. Hilton mentioned that there was no additional funding to encompass the initiative. He said: "[t]he provincial government when they made the mandate did not allocate one extra penny, so they just said do it..." This is a barrier in itself because any money used to provide DPA would have to be taken from other areas and these areas could in turn suffer. There was however roughly $1000/year/school available to go toward DPA implementation (Alberta Education, 2007).

Several teachers also mentioned a disconnect between the government and the school. The argument of moving from theory to practice was brought up on numerous occasions as teachers held negative feelings toward those working for Alberta Education. Mr. Mackenzie went on to describe the people who create initiatives or mandates for the government:

> It's just that when you have people that are not really and truly involved in education they tend to be quote, excuse the expression, the ivory tower attitude, it's like although you're writing....gun laws about guns, when you've never picked one up, it's like what are you talking about? And why are you doing this? So...there's that ivory tower...I don't want to call it a mentality, it's the ivory tower placement, that's what it is. You have to write a very formal document. But sometimes the formalization of the document gets in the way of actually teaching the curriculum.

Mr. Mackenzie later went on to add "you know, and I can say this, most teachers do not have an incredible amount of respect, trust, or...comfort dealing

with government produced documents because 90% of the time they don't know what the hell they are talking about."

Mr. Hilton was another staff member who was not pleased with the practicality of the government's actions and said "the government is attempting to address the problem. But not from a position of intelligence and certainly not from a position of what's practical for education and what's going to be good for kids." Over half of the staff members interviewed had negative experiences or feelings toward the government, which may be a reason to help explain why DPA didn't catch on from the beginning.

Curricular conflicts. Staff members who discussed irritation toward the government made reference to the problems of initiatives and changes being made across all subject areas. Curricular conflicts were also experienced at the school between different subject matter.

When asked how the teachers at Glendale felt about the DPA initiative Mrs. Wells replied:

> I think they're [the teachers] are getting used to it. I think that with any new initiative everyone guards their own subject matter closer to their heart and thinks "well why aren't I getting more time for my subject area?"...again though it's always a timing thing with teachers, time toward physed is time taken away from some other area, and that causes conflict.

This was a frequent example discussed by staff members. The idea that the academic teachers expressed less support toward the DPA initiative because

it takes time away from their subject matter was commented on by several teachers. According to Mr. Ripley:

> ...certainly the [teachers] that are physed oriented think it's great, and the [teachers] that are more academically related probably find it a bit of a nuisance because of the constriction of curriculum in our staff, trying to get everything done especially with grade 9's...trying to achieve certain results because that achievement of results is important too.

Mr. Mackenzie said: "you know maybe some of the other topics...subjects felt like they suffered for it, but I don't think so...oh somebody said "oh you guys are getting brand new volleyball nets and blah blah blah blah..." Mr. Smithson felt that some teachers expressed positive feelings toward physical activity in the school, while others felt that academic subjects were more important. He said

> Some teachers like I said would...will tell you I think physical activity should be done outside the school...and I wish we weren't putting so much work into the jocks and the athletes and that sort of thing, let's worry about academia here.

While the teachers providing PA to students felt it important, perhaps other teachers felt that PA time takes from academic time.

Finding the time and space. When Mrs. Wells summarized how she thought the administration initially reacted to the DPA initiative she said "I think it was seen as a burden to their scheduling...just another thing that...was going to have to be implemented." This was a general consensus among staff as six of the seven made reference to where and how DPA fits into the existing schedule.

This was exemplified by Mr. Hilton when he explained the instruction minutes required at school:

> Well the difficulty we have is that for each of the...each course, we have a certain amount of instructional minutes we have to, we're mandated to... have this many minutes...for example a minimum of 150 minutes a week for fine arts and...certainly for physical education. We also have instruction in CTS [career and technology] courses and how many minutes we must have for those courses. So, it's a matter of us deciding ok which courses do we cut into to steal 30 minutes a day on days that we don't have physed for kids?

Mr. Smithson is responsible for school scheduling and expressed his concerns surrounding the difficulties finding the time and space for DPA. He said:

> I do the scheduling now for ah school, for physed and I realized how difficult it is with our school. We have 3 classes at each level...so that's 9 classes, 7, 8 and 9, plus the interactions site...then we have staff in physed that are part time, and I'm starting to really understand through all the variables that are in there...I find it very hard to book schedules for the gym...27 blocks, within a 29 block week, and still accommodate all the special interests and part times, and everything else...

Similarly, Mr. Nichols said: "...if you look at a timetable of any school, to try to break the day up...and put in a 30 minute session, completely throws off your staff timetabling."

Even two students brought up time constraints in the school. Grace felt that Mr. Hilton "thinks [DPA] is important but we don't have time with all of our other classes to do it every day because we also need, academic education." Lucia felt that "like since there's not enough hours in the day we can't get enough gym or activities."

Overall, staff members expressed the many barriers that contribute to implementing a new initiative. Unfortunately, these perceived barriers may have caused the lack of DPA implementation at Glendale.

Theme: Change did happen

Despite the staff perception that changes had not occurred to initiate DPA and the presence of perceived barriers that hindered full implementation, it was revealed during interviews and informal discussion that some changes did and are currently happening at Glendale. While it is beyond the scope of this study to understand if the changes were a direct result of the DPA mandate, they will be highlighted in two sub-themes: greater awareness and increasing fitness opportunities.

Greater awareness. If the DPA mandate has done anything at Glendale, it has brought a greater awareness to staff and students regarding the importance of physical activity. All seven of the interviewed staff made comments referring to an increased awareness toward physical activity. Mrs. Hail said that DPA is "forcing people to realize how important gym is for everyone so they have

to do it and they have to find ways of incorporating it...so it ...makes teachers anyway think about how they are getting the activity for the kids." Mrs. Wells said that the initiative

> ...has made me more aware of trying to get kids active outside of physed time, so extra curricular, or at lunch time or before school and trying to... engage other teachers in providing those opportunities, like opening up the gyms in the morning or things like that.

Mr. Nichols felt similar to Mrs. Wells and said that "it was just making sure being cognizant of the fact that...we're going to try to get as many kids active in intramurals as well as in our regular physed."

Mr. Smithson touched on resources and how he has become more aware of and starting to recognize the "...need to give more money toward physed and that, I think we're a little bit more loose with making sure we're putting...our budgets and that toward physed, and meaningful physed." Overall the staff showed that recently they have altered their thinking and become more aware of the importance of physical activity as well as providing opportunities and resources for activity.

Increasing fitness opportunities. In addition to becoming more aware of physical activity, the staff at Glendale has made some changes to the existing school protocol. Mr. Nichols said that when the initiative was first implemented teachers would try to get kids more active and said that:

> We did discuss it on a philosophical level that our classes would be...as active as possible ...we'd try to eliminate times where students were just

> standing around in our physed classes...The main objective we tried to keep it very simple, that by the end of each class we want the kids to be breaking a sweat...and if we can do that...if that was kind of a simplified goal, that was good.

Mr. Hilton said that since DPA initiation "certainly teachers have done their best to try and get better with kids." Mr. Mackenzie said that some changes that occurred included using variety and altering teaching methods. He said they started:

> ...bringing in varieties of things...that was a big one you know getting the kids involved in station activities instead of doing push ups...all kinds of, we used to call them calisthenics...shortening our times so that we could fit in more and appropriate sports and activities.

One student, Lucia, also said that "we did a lot more fitness this year I think." It was evident that students were participating in fitness activities, as almost every Wednesday while observing grade 9 PE classes students participated in fitness activities, at fitness stations, learning about heart rate and participating in cardiovascular activities or playing games that worked different muscle groups of the body.

Perhaps one of the biggest changes that has not yet happened is the construction of a new fitness centre that will be built throughout the summer and will be ready for next fall. Mr. Hilton, Mr. Smithson and Mrs. Wells have been very committed to creating an alternate room for physical activity. The fitness centre will be connected to the large gym to alleviate supervisory problems

during PE. This way, during units where space becomes an issue, as I saw in badminton, teachers can have half the class working on fitness activities and then have students switch. The fitness centre will have a variety of cardiovascular machines such as treadmills, upright bikes, recumbent bikes, as well as universal weight sets. Mr. Smithson said that universal weight sets relieve safety concerns. Mr. Hilton commented on the price of the addition:

> This $120,000 investment we're looking in for the fitness room is a huge structural thing and that's going to help us... the money that we're putting in to this fitness program is coming out of our regular allocation. There's nothing extra for that and hopefully that's going to work.

The addition of a fitness centre is a major structural change for the school.

Overall, it seems that despite struggles and barriers to DPA implementation Glendale school has and is in the process of making changes to augment physical activity for students. While the school has not fully implemented DPA to its intended capacity it is important to recognize that change doesn't happen overnight.

Section 3: Current Daily Physical Activity Practices

Current DPA practices show how the school is providing physical activity and how the implementation process is reflecting PA occurrences at Glendale school. Although the school is still struggling with DPA implementation, there are many promising practices occurring daily at the school. These practices will be reflected in the first theme in this section. The second theme will discuss the students and their involvement in PA at school.

Theme: Promising Practices

When it came to opportunity and support for and understanding the importance of physical activity Glendale exhibited many promising practices. Overall, results revealed three sub-themes: that the school had good physical activity role models, a dedicated and supportive staff and strong school pride.

Physical activity role models. All seven interviewed staff claimed that they currently participate in physical activities. These activities ranged in variety and included: exercising at a local gym in the morning before school, playing community basketball, rollerblading, jogging, skiing, volleyball, hiking and hunting.

Not only were staff members active themselves, most recognized that healthy behaviour can "filter down" (Mrs. Hail) to students. Mrs. Hail went on to say:

> ...yeah you've got a healthy school you're gonna have healthier kids, because it's modeling...it's this is how I live, this is what I do, and you know that's...I think it rubs off on not just the kids but it runs off on staff, like it sort of just keeps going on everywhere...it can filter down like that it really can.

Principal Hilton highlighted the importance of role models when he stated: "...you have to have a staff that is committed to physical activity, if you have a staff that is lethargic and doesn't move around themselves well then that's [school PA] not gonna happen." Mr. Smithson supported this contention and

mentioned that staff's commitment to personal PA can translate into teaching practices. He said:

> If you were to look at what their own experiences are with physical activity, I would think they would parallel what their...physical activity in the school are. For instance, if somebody is playing community basketball, they recognize that it's important on their own and they enjoy doing it, they're more apt to value it for their students and want to mentor it for their students.

Role modelling behaviour was also occurring during teaching practices. In PE Mrs. Wells would often join in activities with students. During the Pilates classes she participated with all classes and often would play basketball with students at lunch. Similarly when badminton try outs were occurring both Mr. Smithson and Mr. Ripley would be in gym clothes playing alongside students or against each other. In both interaction classes Mr. Ripley and Mrs. Hail participated with students, showing them how to move, or encouraging them to move by moving themselves. At the swimming pool on Fridays Mr. Ripley and some of the EA teachers would swim with the students. The staff at Glendale provided positive physical activity role models for students through personal involvement in physical activities.

A dedicated and supportive staff. Not only were staff acting as role models, they showed extreme dedication when it came to school athletics. Six staff members reported that throughout the year they had coached and/or

supervised at least one school sport. Five of these staff members did two or more.

Mr. Nichols and Mrs. Wells organized and ran the intramural program during the last 25 minutes of the lunch period. Since teachers are responsible for supervisory time before and after school as well as during the lunch hour these two teachers suggested that instead of supervising school hallways, they open the gym at lunch and run an intramural program for students. While there were a few days the gym never opened at lunch, most days there was either 4 on 4 basketball or bump or drop in volleyball.

In discussing the interaction classes' involvement with the community swimming pool, Mr. Ripley informed me that when he came onto staff at Glendale 6 years prior, the interaction classes were going to the pool on occasion. He felt that this was a great opportunity for the students to get a different kind of activity and organized a specific time and date where both his class and the other interaction class could swim every week. He said that his class almost never misses a week.

There was a general consensus among staff that for a small school Glendale offered much opportunity for athletic involvement. The principal felt that the staff were very dedicated lending to success in sports and athletics. He also explained that teachers who participate in coaching or supervising major sports are often given one extra free preparation period for the year because they are giving up much of their free time for these activities, but that in doing so it costs the school money. However, sometimes there isn't money available to use and

teachers go without these spare periods. He explained the beginning of his career as Glendale school principal:

> See when I first came here we were $230,000 in debt...lots of schools were in debt. We had a staff that still continued to support kids' extracurricular activities and kids activities' and that sort of stuff...if you have a debt, you can't afford to be giving up time in a school, so those schools and there are schools like this- they don't participate....there are a number of junior high schools that only have one or two sports teams per year, that's it! They never have soccer, they never have track...they might have a basketball and a volleyball team but that's it.

Other teachers also commented that the key to successful PA at school comes from the dedication of staff members to support, supervise and coach activities. Mr. Nichols said "I think the only thing that makes it [school athletics] possible is...that we have teachers who are willing to give up a lot of extra time aside of regular, their regular teaching load." Principal Hilton provided an example of one very dedicated teacher at Glendale:

> ...they're [coaching staff] putting in huge amounts of their time after school- their own time they aren't getting a penny for it. There's no remuneration for coaches so it's you get someone like a Gary Mackenzie- he did volleyball, he did soccer, and in the spring time he's going to be doing slow pitch, well his wife gets to see him starting at about 7:00 every night. So he gets here at about 7:00 every morning and then he gets

home 12 hours later. And that's the commitment this man has put in for the kids, and that comes out of his own time.

Mr. Smithson says that he is supervising the junior boys' basketball team and helping coach the badminton teams, he said that he enjoyed taking part for the students "but it definitely has an impact on my family and...that sort of thing." He felt that it was important to offer these teams for the students and this was reflected when Lucia, a grade 9 student, said: "I notice in this school that once I came here I started doing a lot more activities cause it's more available cause we have like the school teams and then like also the intramurals." The dedication and support provided by the staff at Glendale reflect the many physical activity opportunities offered.

School pride. Overall it was very evident that the staff and students at Glendale were very proud to be a part of this school. This was obvious at a school pep rally held one Friday afternoon. Mr. Smithson ran the assembly and in the introduction he announced: "for such a small school we are going to show you how successful we are!" During the assembly all the school teams were introduced. All players got to either stand or come to the front and be recognized while the rest of the school applauded and cheered for them. The girls and the junior boys' basketball teams got their medals for placing 4th and 3rd in city competition. The cheerleaders were also introduced appearing with their first place trophy won at a recent competition. The assembly ended with a cheerleading performance and a small slide show showing the athletic and

academic successes at Glendale. The crowd cheered and applauded throughout the entire assembly.

School pride was also confirmed throughout the interviews. Mr Smithson commented:

> I think...for a school this size, it's admirable what we're doing, to have a junior level team with so few teaching staff, if you look we're maybe 15, 18 teachers, to have that along with all of our other programs and juniors at different levels, that's...unheard of... so what we're doing I think for our students here is excellent and...I think we can be proud of that here.

Mr. Mackenzie also made reference to the amount of school sports offered at the school and said "this school, for its size does probably more things than any other small school I've ever seen in my entire life, at Junior high school!"

Students also expressed pride in Glendale athletics. Charles said:

> I find the school an amazing sports school considering that there's under 400 students, right, and there's like...we still have many awards such as in soccer and we're high achieving in many premier city leagues, so I think that's good that we enforce physical activity and we are successful in many sports, so in the end I'm...pretty proud when it comes to Glendale sport activities.

Adan, another student, added to this by saying:

> We compete with our school with 350 students at our school against schools like Willow Road that have like 800 and over kids and we compete just as well and we beat them in activities and stuff just because

> of…simply how much support we get at school and how many people like can come out and try out and like how much we learn and all that, and how much time we get to play all the sports.

Overall the school showed strong support for sports and athletics. While the staff was dedicated and supportive in providing many opportunities for students, it seems that the school may cater to sports and athletes and less to other physical activities that may interest students. Activities such as dance and gymnastics or other activities based more on effort and fun as opposed to skill and competition were not provided in the same quantity.

Theme: The Students' Responses and Behaviours

The students' responses and behaviours to physical activities offered at Glendale varied from student to student, but for the most part students seemed interested in getting involved in sports and physical activities at Glendale. This theme revealed three sub-themes: an active student body with the desire to play, student participation and student effort.

An active student body with the desire to play. Of the 9 students participating in focus groups, 7 students reported that they participate in some form of physical activity in addition to PE class, whether extra-curricular, intramurals or in community or evening leagues.

Overall Principal Hilton said:

> I would say that…males and females in our school's student…about 75% are active…in school and some of them even out of school but about 75% of our kids are active physically…Maybe not all year long but they're in

definitely in good shape and they're playing organized sports and they're definitely doing things, some of them at an incredibly high level.

Other teachers agreed that Glendale had an active student body and thought that this was due to both in and out of school activities. Mr. Ripley commented: "I think...due to the population, due to the parents themselves, a lot of the kids are involved in clubs, dance, soccer outside of school as well, it's a pretty busy life...at our school."

Students also made comments regarding the activity levels of their peers. Dylan said that "most the kids at our school are active" in which Kenji followed by saying "yeah and they...try out for...teams, school teams." Sara connected the lack of overweight students at Glendale with being an active school when she said "if you look at our like student population and like, there really is nobody that's like overweight or anything, like there's a couple people but in general I think we're all, like we're a pretty active school."

Being an active student body, it wasn't surprising that students wanted to play or participate in activities. There were students who went to the large gym daily at lunch to see if it was open for activity. Large groups of boys in mixed grades would often head outside with a soccer ball or football and play on the field beside the school. Others asked to sign out basketballs or tennis racquets over the lunch period.

A few students in the 9a class showed much involvement in school PA. Dylan said PE "is my favourite subject" and throughout the basketball intramural days, he was present almost everyday. However he said that if it's not basketball

he still gets PA at lunch because "everyday at lunch we go outside and play basketball and...when it gets nicer out we're going to go outside and play soccer... even nicer, football." Kenji said that he attends intramurals almost daily as well. This was noted in observations. If there was an opening for a substitute, or a player that didn't show up, Dylan or Kenji would try to play.

Dylan was on the basketball team and Mrs. Wells told me that he didn't originally make the team. However he came to her crying and she said that maybe he could be a practice player, and if he improved, maybe there would be some playing time for him. He agreed to continue to go to practice because he just wanted to play. At the time of the interview neither of these students played in community leagues. They seemed to rely on the opportunities at school for activity. Some of the other male students from this class participated in intramurals as well, however none played on school teams.

Like 9a the other two grade 9 classes also showed a variety of activity levels among students. Observations showed that some students were playing on several school teams and in intramurals, while others only attended PE.

A common suggestion mentioned by students was that they wanted more time to be active, and specifically more time to play. Dylan thought it would be a good idea to "extend like physical activity, like instead of like 45 minutes or whatever like at least 55 like another 10 minutes or something." Others suggested that they get more game play as opposed to skill acquisition. Charles said:

> I like knowing, I like people that are knowing the rules and stuff but the techniques like I don't see why it really matters like we're not trying out for the Olympics or anything, we're just playing, so, yeah the rules are important but the techniques I don't think are really that big a deal.

Adan continued and said: "yeah like why do we have to learn them [rules and techniques] again, why can't we just play?" This conversation continued with Steve saying: "yeah we need lots more game time." This was often seen in observations during the badminton unit. In several instances when students were supposed to be focusing on skill acquisition activities they would break into game play rallying until they were asked to get back on track and follow instructions. On the last day of the badminton unit students got to play a tournament for the entire period and in all three grade 9 classes students cheered when the teacher made that announcement.

The behaviour and comments regarding less skill and more playing time typically derived from the students considered to be more athletic, more skilful and participating in more school activities. Other students didn't make these comments and appeared to be content with working on skill acquisition when instructed.

Student participation. Student participation ranged dramatically across students and was dependent on the activities provided. With the exception of a few injured students, all grade 9's participated in PE. If they weren't able to participate, Mrs. Wells had them do written PE assignments or research a game like "pickle ball" and create a lesson plan to teach to the rest of the class.

Students felt that they had no choice but to participate in PE. One student said "I mean it's [PE] usually like really planned out and you either do it or, you do it...you don't really have a choice." This quote reflects the participation marks students are asked to provide after each class. Each student rates their individual participation on a scale from one to 10, 10 being the highest. Participation marks include things like: getting changed for class, listening and following instructions, helping with equipment, helping others and effort. On average students in the grade 9 classes gave themselves between 7 and 9.

Student participation rates varied based on the activity taught. Most students enjoyed and participated in game play during PE and less in skill acquisition activities. On occasion, if the grade 9 classes had a supply teacher and were merged with the grade 8 classes and they would play dodge ball. When this game was played many students, specifically girls would get hit on purpose and then sit and talk to their friends on the sidelines. I noticed other girls from the grade 8 class sitting out and/or hiding at the back of the court not really playing. Perhaps this activity is not appropriate for PE as it does not encourage maximum participation for students.

Participation in voluntary activities was much different when compared to mandatory PE classes. Observations of intramurals revealed that it was the same mix of 15 to 25 boys who attended daily. There were also four girls who played on the girls' basketball team that attended intramurals on a regular basis. Newcomers were rare. Several other students came to watch on a daily basis.

Extracurricular sports typically encompassed the athletic students. Sara explained why she didn't participate in extra-curricular activities anymore when she said:

> Once I came here I started like not doing anything, like in grade. 7...I'd try out for some sports teams, and in grade 8 I was on the volleyball team and then like this year I just like gave it all up I guess...because it like just doesn't sound very interesting anymore, like it just seems kinda boring. I don't know if it's necessarily...like it might be our school because like since it's so small it's like always the same kids on every team just cause they're the athletic ones.

With the exception of the Cheer team, the most athletic students usually played on several sports teams.

Student effort. Like student participation, student effort also varied based on individuals and the activities taught. Observations showed that some students appear to work hard every class, while others seem to prefer to socialize during PE. It was common to see both students with red faces during a fitness or badminton class and others who were barely working at all.

When asked if they thought PE was ever hard, Lucia replied: "depends how hard I push myself." Adan agreed and replied: "I'd say it depends. I mean like you can decide how hard you want to work." Charles followed this by saying "yeah like it's up to you if you want to work hard or not, but at the same time you don't have a choice because you get marked on your participation so if you don't try then you don't get a good mark. So there's no choice." When Charles was

reminded of the self evaluation mark "[but don't you give yourself your participation mark after every class?]" he responded "yeah but that's why you kinda have to try." While the self-evaluation mark is called a participation mark, the mark has an effort component. Melody said: "yes I usually give myself 8 [participation mark out of 10] because I usually work hard."

Some students said they tried hard when it was game time or something they enjoyed, but not during skill acquisition. Steve said: "...yeah I try most the times. Well- if it's something I like then I usually go pretty hard." Adan had a similar response and said: I work harder when we are like playing games, but not as much when we are learning the techniques and stuff." This was very evident in observations. Dylan had a different approach to effort and explained:

> I just spread myself out, I don't go all out and then just sit the rest of the time, I just like spread it out...cause I want to get, as much in as possible, not just...like play and like hard for like 10 minutes and then just sit the rest of the time. I wanna like play normal and play the whole time.

Adan went on to explain why he thought some kids didn't try hard: "I think that like a lot of other kids find it easy too, well some of my friends and like because we already know how to play, so they think it's easy and sometimes I think that sometimes they don't like try very hard maybe." Kenji offered another idea why some students don't try: "well like some kids they don't think physical education is important so they don't have to really do it."

When students chose to play, for example on sport teams or in intramurals the effort levels seem higher than when in PE. While students have to participate

in PE and teachers can encourage students be as active as possible, effort level is determined by the individual student.

The current DPA practices at Glendale show that the school is providing many opportunities for students to get active. It seems however that despite staff dedication, positive role models and an active student body, there are still areas in which the school could make changes to reach more students.

Section 4: Where do we go from here?

Results reveal that the Glendale staff perceives that they are providing good PA to the student body. It was also noted however that staff were struggling in some areas of DPA implementation. This section examines the theme *Future improvements.*

Theme: Future improvements

Future improvements provides insight into the areas where the school could improve DPA practices. These areas will be highlighted in four sub-themes: no teacher accountability, the need for professional development and qualified teachers, an uneven playing field: reaching the non-participators and student input.

No teacher accountability. Results showed that some staff felt that in PE there was no teacher accountability. PE is different than other core courses such as Math and English where students are tested not only at the school but also by the government. This often encourages teachers to follow curriculum and ensure that students are learning the required material in order for them to succeed on the tests. Staff could be held somewhat accountable for either positive or

negative scores. In PE there are no Provincial tests and some teachers felt that as a result, at Glendale there was no teacher accountability when it came to providing quality PE classes. Mrs. Wells said:

> ...like we have scheduled time...but are we accountable for what goes on in those classes? Like if you scheduled physed and then it's dodge ball everyday does that make it an active successful program? I mean the time there, are you using the time wisely?

Mrs. Wells felt that both learning and being active were important components in PE but that "physical education seems to run itself" and there is no teacher accountability. She explained:

> We [PE department] try to originally collaborate at the beginning of the year, we set up a plan for all teachers to follow and this is where we work on what teachers are going to cover for the year and then...I actually just set it up and then tell the other two physed teachers: "this is when we can do stuff so then we have equipment set up at the right time", but then each teacher does their own thing according to the outline, so they might not be following it and there's no accountability to be following it.

This quote reveals that there is no assurance to what students are doing is educational and meaningful.

Student focus groups also revealed the problem with teacher accountability. Sara said:

> I thought that, well I had Mr. Mackenzie for the two previous years and then Mrs. Wells for this year and just kind of in comparison I feel like we've

> gone through a lot more different activities with Mrs. Wells, like she makes sure that you do all of the units, whereas with Mr. Mackenzie he...we kind of just did the units that he liked best, like dodge ball...soccer...

Both Lucia and Grace agreed with Sara's comment. Similarly Charles said: "[I like] Mr. Mackenzie...although he has been like I guess maybe not like strict to maybe sticking to the...schedule and everything."

Some athletic students enjoyed having Mr. Mackenzie for PE because they got to play more. Steve said: "[I like] Mr. Mackenzie because he explains everything like barely...he let's us play more, like instead of doing things more, we just play and learn by playing, instead of just teaching us." For the athletic students who have learned and developed skill and game play this may suffice, however, it does not meet curriculum guidelines or provide meaningful PE. It also does not benefit the unskilled students as they would not have the opportunity to learn and practice skills if they only experienced game play.

The need for professional development and qualified teachers. Results showed that 4 interviewed staff members commented on professional development being important for those instructing PE or DPA. Staff demographics revealed that two staff members had majors in PE and one had a PE minor. Others mentioned that they had coaching training in different areas from swimming to basketball. Some felt that this knowledge helped them with activity instruction.

Mr. Ripley felt that his PE background influences his teaching when he said:

> ...because I have a physed degree, so when I incorporate their daily routine, I look at specific parts of the body, warming them up...to a point where they can stretch, cooling them down after, giving them structured time, giving them play time...I'm pretty conscious of all aspects.

Observations of Mr. Ripley's class showed that he did indeed provide these aspects. One teacher praised another for her skill in PE. He said: "Julie's got so much skill that, I mean that's her major so...it's great that she's with grade 9's so that...she can really kind of challenge and push them." Lucia, a student in Mrs. Wells PE class made a similar comment: "Mrs. Wells, I feel she sort of pushes you to like reach or to like become better."

While some teachers were skilled, staff still revealed that professional development (PD) could improve DPA implementation at Glendale and that if more teachers were going to get involved in PA instruction they would need PD. Mr. Smithson said:

> Perhaps more of it [money] could be going into that professional development on how to culture your kids into daily physical activity...we have to really go outside the box here, and we may provide more training for our teachers...whether it be in yoga, whether it be in doing activities that we can do easily within our classrooms.

Mrs. Wells also felt that professional development was essential and felt that staff should be strongly encouraged to attend professional development opportunities rather than having the choice not to.

With the exception of one, all teachers felt fairly confident that they could provide the skills and learning opportunities to students and if they didn't they were comfortable calling on community members or other staff. Mrs. Hail who teaches interactions 1 was the only teacher that expressed her discomfort leading activity and specifically PE. She said:

> Walks are easy. Gym is hard. Really really hard...it's hard to get these guys to play... so trying to...get some kind of a game or something like that going is more difficult. I really want to avoid age inappropriate games such as duck duck goose...or something like that. These are junior high kids you know and...I think it's a little bit demeaning to play those types of games. So I'm a little bit torn about how to get some of the activities going and which ones are going to work.

Principal Hilton also expressed a concern for teachers lacking skill or qualifications in terms of comfort instructing PA, but also brought up the issue of safety. He said:

> ...there's the other part of the problem...if it was a really low level of activity like walking around the classroom you know holding hands, you know stepping sideways I think most teachers would be ok with that. If it gets into something where we have to have an organized sport or skills I think teachers without a physed background- and quite rightly so would say I'm not comfortable doing this, I don't have the training and secondly I don't want to deal with a sports injury because of my lack of training.

It was apparent that most staff felt that training was essential for good PE or DPA. Therefore while the school has some skilled PE teachers, if the school is going to attempt to increase PA times for students, it will be important to ensure that staff have been provided PD opportunities.

An un-even playing field: Reaching the non-participators. Although it was commonly noted that the students at Glendale were active, it was also observed and mentioned that there were many students that were not being physically active beyond mandatory PE classes. This was specifically shown when discussing student participation with Mr. Hilton, he said: "Do all of the kids participate? No. Do all of the kids need physical activity? Yes. How do we do it? I'm not sure." Mr. Mackenzie attributed the lack of student participation to poor attitudes toward PE and not liking sports:

> I just hate it because…I see children in classes who have such a poor attitude toward sports and I don't care about their body shape…I don't mind it when they really don't like a sport and they don't want to play it, that I can understand, but not to be physically involved in year round activities- um no, I can't understand that. But we have a lot of kids who resist.

Kenji also commented on some students not liking PE. He said: "to some people it [daily PE] would be awesome but to some people like no the physical [activity] like they don't like they maybe don't wanna do it."

It could also be argued that since Glendale seemed to cater to team sport athletics, there are many students who were not being reached, because of

issues surrounding lack of interest or lack of skill. Mr. Smithson felt strongly about this:

> We're not doing a broad range [of PA] for everybody. What I mean by that I guess is that if you're going to implement DPA and you wanted to...develop lifestyles for students, the types of activities that we are doing are not gonna inspire some students to go out and pursue physical activity on their own, for the rest of their lives...For some students, you know, maybe the gymnast or whatnot, you know we're not doing anything for them...maybe the runner, or...an archer, whatever have you, we're not offering anything to them, we're offering the same gamut that everybody, that every other school offers. I think we're missing a large portion of our community...it's not because they're computer nerds...it's just that the sports that we offer them, do not appeal to them...

Sara was one of these students, a student who only participated in PE and who didn't always enjoy the team sports frequently offered at school. She said: "I like individual physical activity more than like team activity...like...bowling ...and...yeah more activities well, like running or...just doing actual fitness things like sit-ups or like crunches and stuff." Melody had recently moved to Canada from Spain and mentioned different opportunities existing in her home country. She said: "no [I don't play on school teams or intramurals] I just I did in Spain, but not here, because I don't have all the opportunities...but I don't know something like dancing and gymnastics I don't think [there] will be enough people or something."

While Glendale typically provided sport activities, and specifically team sport activities, in Mrs. Wells' PE classes students were exposed to a variety of activities such as wrestling, dance, badminton, rugby and Pilates in addition to the "core" sports taught in school including soccer, baseball, basketball and volleyball. In other PE classes and during intramural or extra-curricular time these activities were limited and/or non-existent.

Another barrier to encouraging the non-participators at Glendale was skill level. All observed classes showed that there was an un-even playing field, some students were extremely good athletes while others lacked basic skills such as throwing and catching. This made it difficult for the unskilled and at times boring or too easy for the athletic. Sara suggested: "I think others, lots of the other kids find it [PE] too easy...because they, a lot of them play sports outside of school like teams, like basketball and soccer and stuff, so...sometimes I feel like I'm the only one that can't do it." Lucia nodded her head and added: "I've noticed that there's like a small group in our class that's like not the really active and then there's a different portion, that's like the hockey players and the soccer players and stuff."

In a very interesting debate students discussed and exchanged opinions on what activities they would rather play. Steve, an athletic student, said he loved dodge ball and thought it was a good game because everyone could be active. Melody was shaking her head and replied "no, I do not like dodge-ball, because I feel like I cannot play...because I feel like I do not- I can't even throw the ball." Charles then asked her: "yeah but Melody, would you rather- let me ask you this,

would you rather play dodge-ball or ultimate Frisbee?" In which she replied: "no I'd rather play Frisbee, because dodge-ball I cannot throw and Frisbee... sometimes you can get hurt but I would I'd rather play Frisbee." Charles was taken by surprise and had nothing else to say.

With the opening of the new fitness centre staff are hoping to encourage the non-active to get involved in fitness. Principal Hilton said:

> I'm hoping that a lot of kids who don't normally participate in sports will use the fitness centre as an individual thing they can use...some of these kids are not going to make it on the sports teams cause at this age they're competitive. So its not you know join the team and then everyone gets to play, that's not how it works at this level. So...but there's no competition in the fitness centre, so kids can come in and they can go on a walk or they can pick up some weights they can at least start to get into the idea of, you know, personal physical fitness.

Mr. Smithson hopes for similar results saying he is looking forward to "kids to just come in [the fitness centre] in the morning and gravitate towards an activity because they're excited about it, finally something that meets their interests. And...those are the sort of issues that I see being more popular." Hopefully the fitness centre will encourage new students to be active and get involved.

Student input. Teachers are responsible for following curriculum and planning lessons in accordance with the curriculum. Students felt that their classes were always planned and that they were left with little input. Charles said:

> I'm pretty sure teachers are pretty right wing or conservative about sports, like I'm pretty sure they think like what they're doing is correct and it's the right way and...they think that they are doing a good job and I think they...they think we're having enough physical activity but...I think that maybe they should listen to more student input and so on.

In this instance Charles was referring to getting more game play and maybe introducing more sport activities as opposed to repeating the same activities and sports in grade 7 through to 9. Adan adds to this point by explaining:

> We have like one unit that's like student games...there's like two classes where students are allowed to invent their own games and play them, but it's like 2 minutes of everyone playing everyone's game so there's really like only one week of school where we get our input in gym and the rest of it is just following what the teacher has on the...curriculum, or has planned for the day.

Adan was correct in saying that students didn't have much input into the kinds of activities and sports planned by teachers. Teachers followed their lesson plans.

While student input is important, the teacher does have the responsibility to instruct the curriculum. Teachers spend time planning meaningful lessons for students because they have been trained to do so. On the other hand, student input can be valuable for understanding student interests. Students provided examples of ways in which DPA/PE could improve. Some thought it would be nice to get involved in different activities not offered at school such as swimming or rock climbing to try to find new interests. Adan said: "yeah so basically we

should be involved in as many sports as we can so we can see our likes and our dislikes." Others felt that offering more incentives such as less homework or earning volunteer hours for trying out for a team, could help to get students involved in activity. Sara thought that if PE weren't co-ed it would be better:

> ...because sometimes I find that like when you're on a team with like a whole bunch of boys also you don't get the chances to play, like you don't get passed the ball or they just don't think you're good enough, so like you just don't get enough opportunities to.

Both Grace and Lucia agreed with Sara.

Focus groups revealed that students felt that they needed more input toward activities and lesson plans than they were currently given. While choice and input are important it is also imperative that teachers provide quality learning to students. Students should have some input into activities and equipment used however, as suggested by some students, choosing to have game play for the majority of PE class would not be an inclusive, valuable learning environment for all students. Students don't decide and tell teachers what kind of math problems they want to solve, why should they be permitted to decide what activities are played in PE, or to decide that game play should take place during the entire class?

Overall, the students and staff at Glendale perceive DPA to be mostly successful at their school. Table 4.1 provides a pictorial representation of the overall categories, themes and sub-themes associated with the implementation of DPA at Glendale. Despite encountering numerous barriers to implementing the

government mandate, over the course of two years the school has made some changes to help augment PA opportunities for students. These changes have been gradual and encouraging and it is fair to say that Glendale is continuing to make positive strides toward improving student activity levels. It is also important to note that while Glendale has made positive progress in implementing DPA, there are several factors, such as providing teachers with professional development opportunities, encouraging different physical activity opportunities for students and incorporating student input that could be considered to further enable the implementation of the initiative.

Survey Results

The daily physical activity survey administered to all teachers at Glendale school revealed similar findings to the qualitative data. Means and standard deviations from the first section of the survey regarding staff thoughts and feeling toward PA and DPA at Glendale are represented in Table 4.1 and are based on 5-point Likert scales (1= strongly disagree to 5= strongly agree). Data revealed that teachers felt PA is important for student growth and development, that DPA was an important initiative in schools and that the principal at Glendale held positive beliefs toward DPA. However, staff were less clear on their roles and responsibilities regarding DPA implementation. The survey also revealed that staff felt that teachers and students are generally provided the opportunity to participate in DPA planning. On average 72% (3.62) felt that DPA was successful at Glendale.

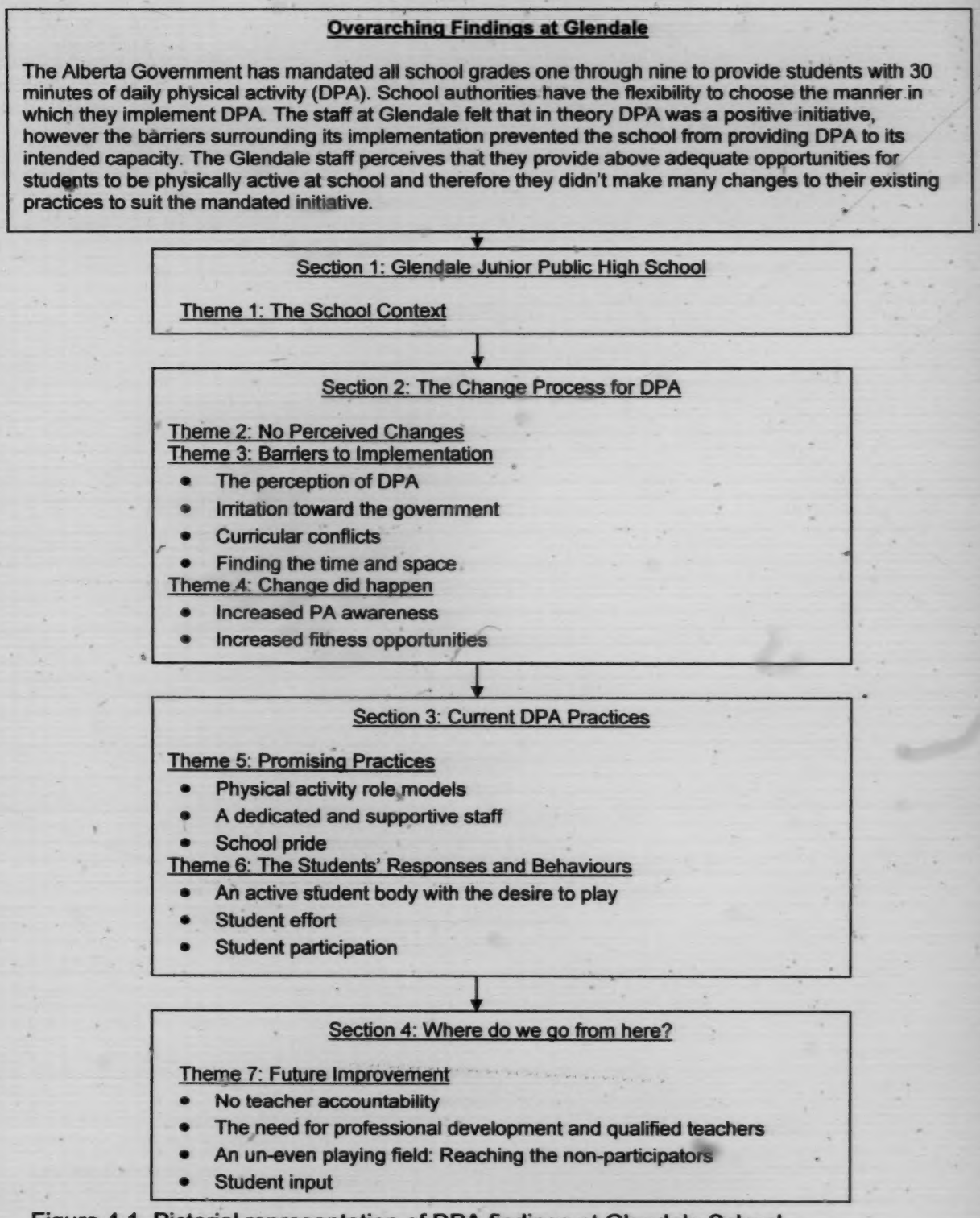
Overarching Findings at Glendale
The Alberta Government has mandated all school grades one through nine to provide students with 30 minutes of daily physical activity (DPA). School authorities have the flexibility to choose the manner in which they implement DPA. The staff at Glendale felt that in theory DPA was a positive initiative, however the barriers surrounding its implementation prevented the school from providing DPA to its intended capacity. The Glendale staff perceives that they provide above adequate opportunities for students to be physically active at school and therefore they didn't make many changes to their existing practices to suit the mandated initiative.
Section 1: Glendale Junior Public High School
Theme 1: The School Context
Section 2: The Change Process for DPA
Theme 2: No Perceived Changes
Theme 3: Barriers to Implementation
The perception of DPA
Irritation toward the government
Curricular conflicts
Finding the time and space
Theme 4: Change did happen
Increased PA awareness
Increased fitness opportunities
Section 3: Current DPA Practices
Theme 5: Promising Practices
Physical activity role models
A dedicated and supportive staff
School pride
Theme 6: The Students' Responses and Behaviours
An active student body with the desire to play
Student effort
Student participation
Section 4: Where do we go from here?
Theme 7: Future Improvement
No teacher accountability
The need for professional development and qualified teachers
An un-even playing field: Reaching the non-participators
Student input

Figure 4.1. Pictorial representation of DPA findings at Glendale School

On 5-point Likert scales (1= strongly disagree to 5= strongly agree), Table 4.2 reveals means and standard deviations of the questions posed surrounding teacher actions during PA.

Table 4.1 Survey Results: Staff thoughts and feeling toward DPA.

Questions	Mean	Standard Deviation
I feel that physical activity is important for student growth and development	4.79	0.43
I feel that Daily Physical Activity (DPA) is an important initiative in schools	4.07	1.21
I feel that the principal at this school has a positive attitude and beliefs toward the DPA initiative	4.07	0.83
The current DPA implementation plan is clear and I know what my roles and responsibilities are in its implementation	3.07	1.38
Teachers at this school are provided opportunities to participate in DPA planning.	3.23	1.09
Students at this school are provided opportunities to participate in DPA planning.	3.31	1.18
I think that DPA is successful at my school	3.62	0.96

Table 4.2. Survey Results: Implementing DPA

Questions	Mean	Standard Deviation
Consider all student abilities	4.60	0.52
Provide opportunities for all students to succeed	4.60	0.52
Provide students with a variety of activities	4.60	0.52
Provide students with activities at different intensities	4.30	0.67
Give students choice	4.10	0.74

*questions from Table 4.2 began with the statement *"when I implement DPA I…*

These questions were only relevant to 7 teachers and two educational assistants who were directly involved in the role of DPA implementation. Means resulting from these questions indicate the DPA provided at Glendale meets the guiding principles of the initiative.

The survey also reported that two teachers were providing DPA five times per week for longer than 30 minute periods. It could be assumed that these results are from those instructing interactions classes. No other survey results reported meeting these guidelines. This was confirmed in observations.

Chapter 5. Discussion

The purpose of this study was to examine the change processes associated with the government mandated Daily Physical Activity initiative, specifically at the junior high level. This was done by examining past PA practices, changes that occurred in order to incorporate the initiative, and the current DPA protocol. Specifically, data were collected from principals and teachers (semi-structured interviews), teachers (DPA survey), students (focus groups) and through observations. The study took place over a 7 week period.

By interviewing principals, teachers and students this research gained insight into DPA implementation from different perspectives. The observational component as well as the teacher survey allowed this information to be triangulated further. Examining the DPA documents proposed by Alberta Education also provided an additional layer of analysis to further understanding the case. Thus study strengths such as using multiple data collection methods, and including the grey literature outside of the case, lead to key findings in this study.

Results showed that the staff at Glendale felt that in theory DPA was a positive initiative, however the barriers surrounding its implementation prevented the school from providing DPA to its intended capacity. It was perceived by staff that above adequate opportunities for students to be physically active at school existed and therefore they didn't make many changes to their existing practices to suit the mandated initiative.

Fullan's (2001) theory of education change at the level of implementation was used in this study to develop and guide research questions and methodology to further understand how a school adapts and changes to encompass this new mandate. Fullan has proclaimed that the dynamics of implementing change in education are affected by 9 factors that have been organized into the categories, the characteristics of change, local characteristics and external factors.

Within the characteristics of change, change is more likely to succeed if there is a need for the change, if the guidelines of the proposed change are clear, non-complex, and practical and will provide a quality outcome in the school (Fullan). Local characteristics including the district, community, principals and teachers, as well as external factors such as government also influence the change in implementing a new initiative in school. If these people support a proposed change, there is greater chance the initiative will be implemented. Together when all factors are positive, the new change should succeed.

While Glendale school was chosen as one school showing promising DPA practices, it was evident that at the time of the study the school was still struggling to achieve the mandated practices. Educational change theory at the level of implementation (Fullan, 2001) helps to provide insight into why Glendale school had not fully implemented DPA.

Relative to the characteristics of change that Fullan espouses school staff felt there was a need to provide increased physical activity opportunities for students at school. However, the actual government mandate was viewed with

less praise. Staff felt that the DPA implementation guidelines were unclear and felt that implementing 30 minute segments of physical activity daily created many scheduling conflicts. Thus many felt that the initiative was not practical at the school. Staff also felt that the activities proposed for DPA were lacking quality. These factors did not aid in positive implementation of DPA.

While Glendale did have members of the community coaching some school sport teams, they were not involved in DPA plans specifically. Therefore the local characteristics of this study examined the principals and teachers. The principal is the main agent of change in the school (Fullan, 2001; DuFour, 1991; Fullan, 1993; Perez, 1999; Cherniss, 2006; Leidle, 2005). If the principal values the program it is more likely to succeed (Fullan, 2001). At Glendale the principal felt that physical activity at school was important, but difficult to mandate. Teachers felt similarly, making change for DPA less encouraging.

The external level characteristic in this study was the Provincial government. Since DPA was mandated by the Alberta government, there was obvious support to provide DPA in the school. Education change literature however states that government mandates often don't create lasting change in schools (Sergiovanni, 2005; Fullan, 2001; Darling-Hammond, 2005). According to Sergiovanni (2005) mandates often fail to recognize that each school is unique and that change relies not on mandates but on other variables such as teacher skill, teacher understanding of subject matter and pedagogy. If school mandates are initiated change is more likely if the mandate follows a top-down bottom-up approach (Darling-Hammond, 2005; Fullan, 1993), where the government in this

case provides support and guidance and the school creates specific implementation plans.

Alberta Education (2006) provided guidance for schools by creating and providing a DPA handbook to aid schools in implementation, professional development opportunities for staff, as well as some financial support ($1000/year/school). Other external organizations such as Ever Active Kids (2007) showed positive support for DPA by providing free timetable examples for schools to adopt. While all these factors provide support for the DPA initiative, local school factors prevented full implementation.

While some of the necessary factors suggested for change (need, government) were positive, others including characteristics of change (clarity, complexity, quality) and local characteristics (teachers, principals) were negative. While many of the study's results are reflected in Fullan's (2001) change theory, other findings were unique to this school. This is not surprising as all theories are parsimonious. Results will be further explained in the following four major categories and the themes and subthemes that emerged in the results.

Glendale Public Junior High School

The first section provided the school context which demonstrated that DPA was not scheduled into the curriculum, but rather consisted of mandatory physical education (PE) classes three times weekly and optional intramurals or extracurricular activities. In other words, it was possible that not every child participated in DPA. Unfortunately, this was supported from results of the Daily Physical Activity Survey (2007) which reported that 24% of Albertan schools

participating in the study had not formally scheduled DPA into their school timetable. Results from this survey represent grades one through nine. While there may be differences in elementary versus junior high timetabling, it is evident that DPA is typically not timetabled.

The Change Process for DPA

The change process *for DPA* revealed three themes. Within the first: *No perceived changes*, it was noted by several staff members that since the implementation of DPA no changes had occurred in school protocol. While some changes had actually occurred (increased PA awareness, fitness centre) these staff members identified change as only scheduling and offering 30 minutes/day of activity.

The second theme *barriers to implementation* revealed several sub-themes, the first being the perception of DPA. Results showed that some staff members had developed a negative perception of DPA. According to Alberta Education (2006) DPA is to be implemented daily for 30 minutes and schools hold the authority to determine how and what DPA activities occur during this time while following proposed guidelines to proper implementation. Activity should be meaningful, but staff felt that DPA was lacking quality and perceived value. Staff may have held these feelings because they felt that activities in DPA were lacking physical intensity. While the DPA handbook does say that activities should vary in intensities, it also states that PA can include activities of lower intensities such as walking (Alberta Education, 2006).

Staff also felt that the proposed DPA activities were lacking quality as students wouldn't be learning skills related to movement. DPA activities were viewed as "silly times" (Principal Hilton) or activities where students participated in less meaningful activities such as "side stepping or holding hands" (Principal Hilton) or tobogganing (Mr. Nichols). The staff at Glendale felt that teachers with physical education backgrounds were highly important in providing good quality physical education programs and that professional development for other teachers was also important. Other research shows that teachers with PE backgrounds or those who have undergone professional development (PD) provide students with more time being physically active (Sallis, et al., 1997; Naylor et. al., 2006; Sallis, et al., 2003) and more time learning skill acquisition (McKenzie et al., 2001), when compared to teachers with no PE background who often lack PA expertise, training and efficacy (Tremblay, Pella & Taylor., 1996).

Since the DPA guidelines state that activity times can be lead by non-PE specialist teachers, Glendale staff may have perceived DPA as lacking value and quality. This negative perception may have influenced the manner in which Glendale chose to implement the mandate by continuing to provide DPA through the activities they felt were valuable including PE, extracurricular and intramural activities, catering to athletics and team sports while offering very limited other physical activities opportunity.

Education change literature suggests that if there is not a strong belief in the initiative then it will not succeed (Fullan, 2001). While staff believed in the importance of PA, DPA was perceived as lacking quality. Fullan also states that

when quality and practicality of an initiative are lacking, its goals are less likely to be achieved.

Another barrier to implementation was that staff members were irritated with both past and present government actions. This lack of trust and respect toward government actions did not help Glendale with the implementation of DPA. Specifically, the principal had negative views regarding government actions and school initiatives. Without the principal's support, a new mandate is unlikely to succeed (Fullan, 2001; DuFour, 1991; Fullan, 1993; Perez, 1999; Cherniss, 2006; Leidle, 2005). The principal felt that the government had given the school an "impossible task" and thus did not take major action in pursuing DPA implementation. This may partially explain why the school had not altered timetabling to accompany DPA.

A third barrier identified was curricular conflicts. Some teachers mentioned that adding DPA into the curriculum meant time away from other academic subjects. While timetabling changes at Glendale did not occur, some teachers worried that others may have felt more resources and focus had gone into athletics, rather than academics.

Finding the time and space was the final barrier identified at Glendale. Difficulties with scheduling while maintaining the required minutes of instruction for all courses proved to be the biggest problem at Glendale. The Daily Physical Activity Survey (2007) revealed a similar finding. The top two challenges reported in implementing DPA were time allocation and timetabling, and lack of facilities and/or space.

Alberta Education did provide timetabling examples for schools to adopt, and one teacher reported sharing these timetables with the principal. While the timetables were provided as examples of how schools can approach DPA implementation each school is unique. These timetables may not have worked at Glendale based on courses offered at the school, staffing issues as well as gymnasium space. However, other resources were also available for school use. Ever Active Schools (2007) is an Albertan organization that supports daily physical education (DPE) in schools. Although DPA and DPE are different, Alberta Education (2006) states that PE satisfies DPA requirements. Ever Active Schools has developed timetables for all grades showing ways in which schools can implement DPE while continuing to provide students with all other subject areas and meet the teaching guidelines proposed by Alberta Education. These timetables are free of charge and are offered online to the public. While the Principal claimed that DPA was next to impossible to fit into existing school protocol, perhaps administration did not use available resources to aid in implementing DPA. Further, since staff viewed DPA as lacking quality or meaning, and regarded PE as more beneficial to students, offering DPE may be a better option for this school. However, offering DPE may not be possible due to staffing issues or administration visions and understanding.

Despite barriers to implementation a fourth theme revealed that *change did happen* at Glendale. Teachers' increased awareness of PA importance lead to an increase in fitness opportunities for students. The development of a fitness centre, despite competition for resources, is tangible evidence that opportunities

for PA will increase. Teachers and principals felt that obesity and inactivity were societal problems and most felt that there was a need to promote PA and to encourage and provide opportunities for students to be more actively involved at school. This links to Fullan's (2001) theory that if staff believe that there is a need for a mandate it will more likely succeed. While not all staff members felt that DPA was practical, from the theoretical perspective there was a general consensus that students needed to be more active and staff tried to take action to achieve this.

Current DPA Practices

Glendale showed that the school was currently demonstrating some *promising practices* toward DPA. The staff at Glendale provided excellent physical activity role models for students. Staff members were involved in their own personal physical activity and showed students the importance of PA by participating, organizing, teaching and coaching different activities at school. Other literature shows that teachers often provide positive and negative role models for students (Story, Kaphingst & French; Weber Cullen, T. Baranowski et al., 1999). Thus the positive PA behaviours of teachers at Glendale may influence students to follow their actions and participate in regular PA.

Results from this study also revealed that both student body and staff were proud of Glendale athletics and achievements. This was in part due to the dedicated staff in providing athletic opportunities to students. The school board offers inter-school competitive sports including cross-country, soccer, volleyball, basketball, wrestling, cheer, curling, slow-pitch, rugby, track and field, and

badminton (Alberta Education 2007). With the exception of three, Glendale took part in all other sports. Staff commented on their high rates of involvement when compared to other schools of similar size. An Alberta Education PE consultant confirmed this finding. Among the 16 schools in the city with a similar student population Glendale was in the top five schools that offered the most inter-school sport teams. These findings do not include athletic or fitness clubs or groups that may be offered at other schools.

In the sixth theme: *The students' responses and behaviours*, it was found that overall, Glendale had an active student body that wanted to be involved in PA. Research shows that it is in both schools and homes where adolescents construct their physical activity behaviours (Kahn, Ramsey, Brownson, Heath, Howze, Powell et al., 2002). Staff commented frequently on students' physical activity involvement both in- and after school activities. It was estimated by the school principal that about 75% of Glendale students were active. Other research has indicated that as children become adolescents rates of physical activity decrease (CFLRI, 2007). The 2005 Physical Activity Monitor found that in youth age 5 through 12, 76% participate in sport while in ages 13 through 17 only 61% participate in sport. Subjective findings from the present study show that Glendale students' physical activity participation rates are comparable to these results.

Student motivation for participating in physical activity has been attributed to several different variables. Research has found that adolescents are more likely to participate in PA if peers and significant others hold positive beliefs and

behaviours toward PA, if they have perceived competence in the activity or skill and if they experience enjoyment and interest in the activity (Sallis, Prochaska, & Taylor, 2000; Dishman, Motl, Saunders, Felton, Ward, Dowda, Pate, 2005). These findings may help to explain why some students in the present study did not participate or put effort into activities during PE class. The students who lacked athletic talent may have had low perceived competence in skills and thus did not want to participate in activities as a result of feeling incompetent and/or being embarrassed. Other literature has shown that the young adolescent age is a time of personal criticism (Knowles & Brown, 2000) where teenagers are often worried about self image. Being incompetent in sports and athletics may deter students from participating in DPA because of the fear of being teased (Knowles & Brown) and a constant worry of what others think (Rice, 1999).

Research has shown that peers influence adolescents' self-perceptions and behaviours and may play a more prominent role than adults such as parents and teachers (Beets, Vogel, Forlaw, Pitetti, & Cardinal, 2006; Knowles & Brown, 2000) An obvious example of how social factors and peer influence can be considered correlates to PA participation and effort among adolescents (Sallis, Prochaska, & Taylor, 2000) can be provided with the Cheer team at Glendale. At the beginning of the year there were five grade 9 students on the team, but after one student decided to leave the team, all of her peers followed her lead and quit the team. Some teachers said that the social aspects were more important for these particular students.

Peer influence and the desire to be with friends was also evident as students would often spend time organizing partners or groups to be with friends or in games like dodge ball where they would get purposefully eliminated in order to sit on the sidelines and talk with their peers rather than participate. Lack of participation in games like dodge ball however may have also been because some students didn't posses the skills and thus the perceived competence to play. Others may have found the activity not enjoyable.

On the other hand, it is also possible that students may have participated in physical activities because their friends did. Many who came to play basketball at lunch intramurals came with a group of friends and wanted to be on the same team as their friends, showing that peers can also influence others to become involved in physical activities. Overall, these findings show that it is important to include social aspects for students during DPA times as it could lead to greater rates of participation.

Enjoyment and interest are other motivating factors for participation and effort in PA. Specifically Dishman and colleagues (2005) found in their randomized controlled trial that increased enjoyment in PA resulted directly in increased PA among adolescent girls. The present study found that students participated more frequently and tried harder when they enjoyed the activities taught during PE and intramurals. Specifically, the athletic students participated more and with intense effort during game play or during activities (e.g. extracurricular or intramural) in which they chose to take part. It has been found that adolescents are likely to be motivated to participate in physical activities with

relatively complex movements and skills and those that require cognitive challenge in PA (Chen & Hancock, 2006). Students may have enjoyed game play as there is a greater cognitive challenge when compared to skill acquisition practice activities. The more skilled students discussed boredom with the repetition of skill acquisition activities throughout their three years at Glendale. Therefore, if teachers learn what activities interest students most, and incorporate these activities into their teaching, PA participation rates may increase.

Where do we go from here?

In addition to finding promising practices at Glendale, Future improvements were also identified under the category *Where do we go from here?* Firstly, some teachers felt that there was no teacher accountability for instructing any form of DPA and more specifically PE. Students made mention of some teachers skipping units or skill acquisition activities and focusing more on their own preferences such as game play or specific sports. While it was difficult to find a connection to PE staff accountability in the associated literature, it is possible that the lack of teacher accountability is related to the findings by Sparkes and Templin (1990), that is that there is a common feeling of PE being less important than other subjects. They believe that PE is viewed as a less important subject matter because of history's distinction of separating the mind and body and consequently thought being viewed as more important than movement. Their study reveals that there is a stigma that PE teachers play games all day and don't prepare lesson plans. In referring to PE classes a PE

teacher from their study said: "I don't remember him [the principal] saying anything really [about PE]. I think he just thought that we were there, knew what we were doing and let us get on with it..." (p. 9). This comment was very similar to the protocol at Glendale and was reflected in one teacher's viewpoint in the current study that "physical education runs itself." By this the teacher meant that the administration assumed or genuinely felt that PE was adequate and therefore there was no need to further verify teacher actions for quality PE.

Hastie and Saunders (1991) attribute PE teacher accountability to the task involvement of students. They state that if the teacher provides active instruction, monitoring of student behaviours, and rewards and consequence, students are likely to be involved, thus showing the teacher's accountability through the task involvement of the students. The problem is that the Glendale administration may not know if teachers are providing students these cues for task involvement. While some students provided insight into their teachers' teaching methods, information obtained from these students was not solely based on factors that could verify a teacher's accountability, such as: providing active instruction by teaching all curriculum content, and providing all students opportunities to succeed. Instead, students discussed factors such as which teachers they preferred "because he explains everything like barely, like he let's us play more" (Steve). The lack of explanation provided by this teacher may have encouraged this student to participate, however others found this to be problematic. It could thus be useful for administration to hear student voices and observe classes to learn if DPA/PE teaching is effective and/or appropriate.

In cases where PE teachers favoured areas such as game play or specific sports during PE, it may have been because they lacked the qualifications to teach PE. Several teachers commented on the need for professional development (PD) or for the hiring of teachers with PE backgrounds. When teachers are subject to on-going training and provided additional resources, outcomes are more favourable for providing increased and more frequent levels of physical activity for students (Naylor et al., 2006). As previously noted having qualified instructors and providing PD for teachers can help to increase the amount of activity provided to students (Sallis et al., 1997). Several school intervention studies have demonstrated that PE teachers and teachers who receive PD provide students with better quality PE classes (Sallis, et al., 1997; McKenzie et al., 2001; Tremblay, Pella & Taylor., 1996). Studies focusing on issues surrounding physical education implementation can help to illuminate issues that non-specialist teachers may encounter while implementing DPA.

In education undergraduate programs for those who aspire to be "generalist" elementary teachers, there is often little time spent learning the essential components required to teach a proper physical education class, or in this case physical activity. A British study indicates that in teacher training, many leave with little experience of high quality physical education teaching (Caldecott, Warburton & Waring, 2006). Similarly, at the University of Alberta, students in the Faculty of Education interested in elementary education are only required to take one course related to physical education (University of Alberta course calendar, 2006). Although beneficial, one course alone may not provide future teachers

with sufficient information regarding teaching physical activity sessions daily. While the difference between PE and PA has been previously noted, the guidelines of DPA do show that like PE, it should be meaningful and beneficial to the students, and thus feelings, attitudes and abilities in teaching PE may transcend to DPA.

At the time of the study DPA was provided mainly by teachers with PE or coaching backgrounds. One teacher had attended some of the 257 offered (Alberta Education, 2007) PD sessions for DPA, however PD opportunities for the rest of the staff still could be encouraged. Also, since Glendale had been pondering the idea of including DPA during classroom subjects, continuous PD for unqualified teachers would be essential in order to ensure some form of quality activity for students.

Reaching those students who have difficulty moving and the students who don't participate could be considered the greatest area of improvement needed at Glendale. Results showed that although there was an active student body, there was according to the principal roughly 25% of the student body that were not active enough. Other research shows similar findings indicating that among girls age 12-14 years, 55% are inactive and in the same age group, 43% of boys are inactive (CFLRI, 2005b).

As previously noted, students are more likely to participate in activity if it is enjoyable and if they feel competent (Dishman, et al., 2005; Chen & Hancock, 2006). A difficulty for schools is that abilities and preferences range among students. This was evident in the grade 9 classes at Glendale as some students

enjoyed competitive sports and had high participation levels while others avoided participation beyond mandatory PE. Glendale provided ample physical opportunities outside of PE for students, however most were in the form of invasion type sports or sports where students needed good skills to succeed. Providing different activities to students may encourage those who struggle with movement and those who do not participate to get involved.

The 2005 Canadian Community Health Survey (Statistics Canada, 2005) reported that the most popular activities participated in by youth aged 12 through 14 years were walking, jogging, bicycling, swimming, home exercise, basketball, soccer and social dancing. Only two of these 8 most frequently report PA were available in extracurricular activity at Glendale. Perhaps offering alternative activities (outside of PE) aside from the standard school sports would encourage more students to get actively involved.

Among the non-participators at Glendale it was also evident subjectively that the girls had lower participation rates in physical activity when compared to the boys. This was reflected specifically at lunch time intramurals where the majority of participators were boys, as well as on school teams such as basketball where the boys had both junior and senior teams and the girls had only a senior team. The girls only had one team because not enough students tried out to create two teams. The lack of participation in PA by adolescent girls and young adults has been found in other studies (CFLRI, 2007: Hay & Donnelly, 1996). Studies show that adolescent girls are interested in different activities when compared to boys and thus it may be beneficial to offer PA opportunities

for girls in areas where interest is greater such as social dance and aerobic exercises (CFLRI, 2007) or highly active pursuits such as hiking, swimming or skating (Resnicow, Lazarus Yaroch, Davis, Wang, Carter, Slaughter, Coleman, & Baranowski, 2000).

Getting more student input may also be considered a beneficial means of establishing greater participation rates in physical activities at school. Focus groups confirmed that while students enjoyed PE, suggestions for improvements, such as offering different sports and activities or having gender segregated PE class were also mentioned. As previously noted, enjoyment and competency result in greater rates of participation and effort among adolescents thus hearing and implementing students' thoughts, opinions and preferences could be valuable to the school to enhance the current DPA program.

Limitations

The most obvious limitation of the study is that it was a case study, thus data was derived from only one school. This makes generalizibility of the results difficult, as each school is unique. These results however do present information that other schools may access to provide an example of how DPA may be implemented into junior high schools.

A few other limitations were present in this study. The first pertains to the recruitment of students for focus groups. While focus group selection yielded a variety of different students from athletic, popular, unskilled and both genders, random selection was not based on the entire student population. Parental consent forms were passed to students at the beginning of the study and

reminders to return signed consent were constant, however only a third of students returned signed consent forms. Based on observations and discussion with the PE teacher, there were some students that disliked PA and PE, and none of these students returned parental consent forms. Therefore interview information from this population was not represented in the study.

Also, although parents provided consent, students had the opportunity to choose if they wanted to participate in the focus groups. A few of the original students randomly selected chose not to participate because they did not want to miss part of their lunch hour. It was premeditated that holding focus groups throughout the lunch period may deter some from participating, however holding focus groups during PE class would have taken away activity time for these students. Perhaps future student focus groups conducted at school could offer some form of incentive for participating.

Another potential limitation was the observation procedures used during the study. Throughout the study I observed grade 9 students during various physical activities, mainly during PE because it was grade 9 students that were participating in focus groups, thus it was important to observe their activity to provide a setting for the information they provided during focus groups. One teacher taught all of the grade 9 PE and therefore observation information was able to be triangulated with interview and focus group information. There were however other teachers who provided some form of DPA to grade 9's in form of intramural and extra-curricular activity. While I was able to observe these activities, I was not able to observe these teachers teaching PE to other grades

(grades 7 and 8) which were referenced to frequently during interview sessions. Information provided by these PE teachers during interviews was not as easily triangulated with observation material because I had witnessed little PE instruction by these teachers, meaning interview material regarding their PE practices may have lacked the credibility that was present in the grade 9 analyses.

Finally, the limitation of the terminology used by staff, students and documents may have presented some limitation in the study. Since the school had not devised a set DPA schedule and the term DPA was not used, it seemed that interview questions posed to focus groups and to staff members regarding DPA were answered in terms of physical education or sports, both of which are different to DPA. This may have posed limitations to understanding if processes, actions and results were linked specifically to DPA. However it was assumed that since Glendale identified DPA as PE, intramurals and extracurricular activities that these terms all represented the same thing.

Chapter 6. Conclusion and Recommendations

Conclusion

The purpose of the Daily Physical Activity (DPA) initiative is to augment physical activity rates of children and youth in order to aid with the resolution of the obesity epidemic that is a growing concern in Canadian society. As physical inactivity rates among children and youth have increased the Alberta government has attempted to mitigate this epidemic by mandating Alberta schools to provide daily physical activity to all students grade 1 through 9 (Alberta Education, 2006).

At the time of the study Glendale Junior High School had not made any timetabling changes or DPA implementation plans specifically to change school protocol and provide students with 30 minutes of physical activity daily. While barriers to these changes existed and thus prevented full implementation, the school did show other positive changes and practices for DPA such as increasing student opportunities to be physically active during physical education, providing intramurals during lunch hours, and an extracurricular sports program. Further, they are in the process of constructing a fitness centre. These changes were made in an attempt to augment student physical activity levels and opportunities at school.

While the idea of the DPA initiative is positive, more attention needs to be paid to the implementation process and ways in which junior high schools can achieve quality physical activity for students while continuing to provide all other areas of the curriculum. As suggested by Ever Active Schools (2007), providing

students with daily physical education lead by teachers with PE backgrounds is one way of ensuring that students receive quality DPA.

Components of Fullan's (2001) education change theory at the level of implementation provide insight into why DPA has not been fully implemented at Glendale. Specifically, negative reactions to the DPA initiative were prevalent. Aside from a general consensus that increasing physical activity (PA) was needed, staff felt that the DPA mandate lacked quality, had unclear requirements and was too complex to implement at their school, thus making it an impractical task. Local characteristics, in this instance the principals and teachers, demonstrated mixed reactions toward the initiative. While staff felt theoretically DPA was a positive initiative, its lack of practicality left some unsupportive. When people are not supportive of a new initiative it is difficult for a change to occur (Fullan, 2001). While external factors, such as the government, provided support for DPA through different resources, it seems that their efforts were viewed less favourably by staff and that offered resources were not accessed. Glendale showed some positive progress toward DPA implementation however education change literature highlights the barriers preventing full success.

In hindsight it is important to note that the DPA initiative is still a relatively new school initiative that requires schools to adjust school protocol dramatically. Schools are complex and therefore when a new change is proposed, if it is going to be meaningful it will require time and effort (Fullan, 2001). As Mr. Mackenzie said " it's very hard to…continually improve, renew, get new ideas, it's…that's a very difficult thing to do and you know change is not easy!"

Recommendations

This study examined DPA implementation at the level of administration, teachers and students to gain insight into how a junior high school can implement the DPA mandate. The factors affecting implementation change in education settings (Fullan 2001) have been somewhat addressed at Glendale. Study strengths such as using multiple data collection methods, and including the grey literature outside of the case, lead to key findings in this study. These findings highlighted barriers to DPA implementation, current positive practices and future recommendations Glendale may wish to address in order to continue the progress toward providing students with daily physical activity at school.

While Glendale showed some promising practices of PA opportunities for students and an active student body with the desire to play, it is uncertain if these positive findings were a result of the DPA initiative itself or rather the PE, intramural program and extracurricular activities that were already offered at the school prior to DPA implementation. Further research to understand whether the effects of DPA specifically are showing positive benefits for students, may be thus important to examine in junior high schools. This information could help school staff with implementation as it would provide insight into the positive effects of providing all students with DPA.

Alberta Education (2007) has conducted a recent survey based on DPA in schools across the province. This research has not however separated findings among elementary schools and junior high schools, where distinct differences exist within the curriculum and unique needs of students at different age groups

are present. Further research to gain insight into DPA specifically at the junior high school level would be beneficial.

Alberta Education (2006) has provided schools with a DPA handbook as well as other resources (e.g. timetables) to help with the implementation process. Other organizations (Ever Active Schools, 2007) have also created resources to aid in implementing DPA/DPE. Glendale did not take full advantage of these resources and continues to struggle with the implementation process. While this was a case study examining only one school, study participants, as well as Alberta Education, have noted that other junior high schools are in similar challenging positions. It would be beneficial to understand reasons for the use or lack of use of DPA resources and how these resources could be marketed more effectively to encourage junior high school staff to use them.

As previously noted students can experience enhanced physical activity when teachers are provided with professional development opportunities (Naylor et al., 2006; Sallis et al., 1997; Mackenzie et al., 2001). Building DPA capacity through professional development opportunities may help to improve DPA practices. While Alberta Education currently offers these opportunities, perhaps DPA development could begin in University teacher training programs. This would allow new teachers to learn how DPA could fit into school curricula. Current teachers and principals should also be encouraged to attend on-going professional development sessions. These sessions should include teaching strategies relevant to providing PA in different settings and through different curricula, as well as DPA planning and timetabling. Specifically, providing

additional support for timetabling could increase physical activity opportunities in the school.

This was the first known qualitative study to gain insight into students' opinions regarding daily physical activity in an Albertan junior high school. While results provided insight into student preferences and dislikes and future recommendations for DPA, this study only represents students from one school. Schools have taken a variety of approaches to meet the requirements of the DPA initiative. Thus recommendations for further research would include gaining more insight into junior high student perspectives. Understanding and implementing these perspectives could aid in increasing DPA participation and effort levels among students.

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Appendix A: Participant Letters and Consent Forms

Parent Information Letter

Dear

Dear Parent:

My name is Audra Thompson and I am a student at the University of Alberta. I am doing research for my degree under the supervision of co-researchers: Dr. Dru Marshall, Dr. Ron Plotnikoff and Dr. Nancy Melnychuk. My research project is called *Implementing Daily Physical Activity in a Junior High School: A Case Study.* I will be the main researcher for this study. I would like to invite you to participate in this study. This study will help me learn how Alberta's mandated Daily Physical Activity (DPA) initiative can be implemented in junior high schools. Your child/children's school has been selected for the study. I want to understand how the school implemented DPA, by observing and interviewing the principal, teachers and students.

I will be observing the general routine or schedule of DPA within all grade 9 classes. I will be observing what types of activities occur in DPA, how long they last, where and when they take place and if the students are provided any choice regarding the activities. There will be no direct observation of individual students. Following the observation period, your child may be asked to take part in a focus group interview with other classmates. The interview will ask questions about student likes/dislikes of DPA and what activities they do and if they have any choices in DPA. The interviews will take place at school, during school hours or during the lunch period and will last roughly 45 minutes. Interviews will be tape recorded.

After I finish the interviews, they will be typed. I will compare what your child said with what other students, teachers and principals said. I will look to see if I can find any similarities and/or differences in opinions toward DPA.

Benefits, Risks and Confidentiality

I hope that by hearing about the implementation of DPA I will be able to understand how DPA can work in junior high schools. Some schools might be having problems doing DPA and this research might help them improve DPA. Information you provide may help others succeed. Information gathered may also help to make more DPA improvements in your child's school.

There are no known physical risks involved within the study. During the focus group interviews, your child may have different opinions than other students. Others might disapprove of your child's opinions about DPA. I will act as a guide to make sure that all students understand that each individual has the right to speak freely about their opinions. I will also inform students that others may voice opposing viewpoints.

Information your child gives me will not be shared with others outside of the study. All information will be held private. Student and school names will be changed in the research. Any information that may give away a student's identity will be removed. After the interviews, the participants' privacy will remain the main concern. Information will be coded and stored in locked filing cabinets in an office at the University of Alberta. Only investigators in this study will have access. While the researchers can protect the privacy of students, we cannot promise that other students involved in the focus groups

will. We will ask the other students in the interview to respect the privacy of others by not sharing the information they hear in the interview with others.

Freedom to Withdraw

Students have the choice to participate. Students will be reminded that at any point during the study they can withdraw with no questions asked. They can tell or write me that they no longer want to be a part of the study. If they stop taking part, they will not be asked any other questions. Data from students that leave the study will be destroyed right away.

Concerns

If there are any questions regarding this study ask the main researcher Audra Thompson (780) 492-8182, or you can contact any of the co-researchers: Dr. Dru Marshall (780) 492-8182, Dr. Ron Plotnikoff (780) 492-4372 or Dr. Nancy Melnychuk (780) 492-0543. If there are any further questions you can contact the chair of the Research Ethics Board at the University of Alberta, Dr. Wendy Rodgers (wendy.rodgers@ualberta.ca (780) 492-2677). Dr. Rodgers has no direct involvement in the study.

Parent Informed Consent

Title of Project: *Implementing Daily Physical Activity in a Junior High School: A Case Study*

Part 1: Researcher Information		
Name of Principal Investigator: Audra Thompson Affiliation: Faculty of Physical Education and Recreation, University of Alberta Contact Information: audra@ualberta.ca (780) 492-8182		
Name of Co-investigator: Dr. Dru Marshall Affiliation: Faculty of Physical Education and Recreation, University of Alberta Contact Information: dru.marshall@ualberta.ca (780) 492-8182		
Name of Co-investigator: Dr. Ron Plotnikoff Affiliation: Faculty of Physical Education and Recreation, University of Alberta Contact Information: ron.plotnikoff@ualberta.ca (780) 492-4372		
Name of Co-investigator: Dr. Nancy Melnychuk Affiliation: Faculty of Education, University of Alberta Contact Information: nem@ualberta.ca (780) 492-0543		
Part 2: Consent of Subject		
Do you understand that your child may be asked to take part in a research project?	Yes	No
Have you read and received a copy of the attached Information Sheet?	Yes	No
Do you understand that your child is free to refuse to participate, or to withdraw from the study at any time, without consequence, and that his/her information will be withdrawn at their request?	Yes	No
Do you understand the benefits and risks associated with the study	Yes	No
Have the issues of confidentiality been explained to you? Do you understand who will have access to your child's information?	Yes	No
Part 3: Signatures		
I agree, that if selected, my child can participate in the interview Date_____ Signature _____ Printed Name _____ Researcher's Signature _____ Witness Signature_____		

Teacher Information Letter

Date

Dear Teacher:

My name is Audra Thompson and I am a student at the University of Alberta. I am conducting research for my degree under the supervision of co-investigators: Dr. Dru Marshall, Dr. Ron Plotnikoff and Dr. Nancy Melnychuk. I will be the primary investigator for the research project titled *Implementing Daily Physical Activity in a Junior High School: A Case Study.* I would like to invite you to participate in a study that will help us learn how Alberta's mandated Daily Physical Activity (DPA) initiative can be implemented in junior high schools. Your school has been selected for this research. The purpose of this study is to understand how exactly the school implemented DPA, by observing and interviewing the principal, teachers and students.

I will be observing DPA in grade 9 classes to learn when it is done, what activities are done, where it takes place and the general routine or schedule of the initiative. There will be no direct observation of individual students. Following the observation period, all teachers will be asked to complete a brief survey regarding the implementation of DPA in their school. Teachers like you, who provide DPA to grade 9 students, as well as the physical educator, will be asked to participate in an individual interview following the observation period. The interview will consist of questions surrounding DPA, its implementation and past implementation, and your beliefs regarding the initiative and physical activity. Information you provide in the interview will be confidential. The interviews will take place at school, during school hours or during the lunch period and will last roughly 45 minutes. Interviews will be tape recorded.

Upon completion, all interviews will be typed. I will compare what you said with what other students, teachers and principals said to see if I can find any common themes associated with DPA.

Benefits, Risks and Confidentiality

I hope that by discussing issues surrounding the implementation of DPA I will be able to understand how it can be implemented in junior high schools and make recommendations to other schools who may be struggling with the initiative. Information you provide may be able to help others succeed. Information gathered may also improve DPA in your school

There are no known potential risks involved within the study.

Information you provide will not be shared with others outside of the study. All information will be held private and your name and school name will be changed in text. Any information that may give away your identity to others (including staff in your school) will be removed. During the data analysis, the participants' privacy will remain the top priority. Information will be coded and stored in locked filing cabinets in an office at the University of Alberta to which only investigators will have access.

Freedom to Withdraw

The study is voluntary. You will be reminded that at any point during the study that you can withdraw with no questions asked by verbally informing or writing the primary investigator. Upon withdraw, you will be asked no questions. If you withdraw from the study data collected from you will be destroyed immediately.

Concerns

If there are any questions regarding this study ask the primary investigator Audra Thompson (780) 492-8182, or contact any of the co-investigators: Dr. Dru Marshall (780) 492-8182, Dr. Ron Plotnikoff (780) 492-4372 or Dr. Nancy Melnychuk (780) 492-0543. If there are any further questions contact the chair of the Research Ethics Board at the University of Alberta, Dr. Wendy Rodgers (wendy.rodgers@ualberta.ca (780) 492-2677). Dr. Rodgers has no direct involvement in the study.

Teacher Informed Consent

Title of Project: *Implementing Daily Physical Activity in a Junior High School: A Case Study*

Part 1: Researcher Information		
Name of Principal Investigator: Audra Thompson Affiliation: Faculty of Physical Education and Recreation, University of Alberta Contact Information: audra@ualberta.ca (780) 492-8182		
Name of Co-investigator: Dr. Dru Marshall Affiliation: Faculty of Physical Education and Recreation, University of Alberta Contact Information: dru.marshall@ualberta.ca (780) 492-8182		
Name of Co-investigator: Dr. Ron Plotnikoff Affiliation: Faculty of Physical Education and Recreation, University of Alberta Contact Information: ron.plotnikoff@ualberta.ca (780) 492-4372		
Name of Co-investigator: Dr. Nancy Melnychuk Affiliation: Faculty of Education, University of Alberta Contact Information: nem@ualberta.ca (780) 492-0543		
Part 2: Consent of Subject		
Do you understand that you may be asked to take part in a research project?	Yes	No
Have you read and received a copy of the attached Information Sheet?	Yes	No
Do you understand that you are free to refuse to participate, or to withdraw from the study at any time, without consequence, and that your information will be withdrawn at your request?	Yes	No
Do you understand the benefits and risks associated with the study	Yes	No
Have the issues of confidentiality been explained to you? Do you understand who will have access to your information?	Yes	No
Part 3: Signatures		
I agree to participate in the teacher survey Date_____ Printed Name _____ Signature _____ *I agree to participate in an interview if I am selected* Date_____ Printed Name _____ Witness Signature _____ Signature _____ Researchers Signature _____		

Principal Information Letter

Date

Dear Principal:

My name is Audra Thompson and I am a student at the University of Alberta. I am conducting research for my degree under the supervision of co-investigators: Dr. Dru Marshall, Dr. Ron Plotnikoff and Dr. Nancy Melnychuk. I will be the primary investigator for the research project titled *Implementing Daily Physical Activity in a Junior High School: A Case Study.* I would like to invite you to participate in a study that will help me learn how Alberta's mandated Daily Physical Activity (DPA) initiative can be implemented in junior high schools. Your school has been recommended for this study. The purpose of this study is to understand how the school implemented DPA, by observing and interviewing the principal, teachers and students.

I will be observing DPA in grade 9 classes to learn when it is done, what activities are done, where it takes place and the general routine or schedule of the initiative. There will be no direct observation of individual students or teachers. Following the observation period, all teachers will be asked to complete a brief survey regarding the implementation of DPA in their school. Teachers who provide DPA to grade 9 students as well as the physical educator will be asked to participate in individual interviews following the observation period. You will also be asked to take part in an interview. The interview will consist of questions surrounding DPA, its implementation and past implementation, and your beliefs regarding the initiative and physical activity. The interviews will take place at school, during school hours or during the lunch period and will last roughly 45 minutes. Interviews will be tape recorded. The researchers will also ask to examine the schools documents related to DPA.

Upon completion, all interviews will be typed. I will compare what you said with what other students and teachers said to see if I can find any common themes associated with DPA.

Benefits, Risks and Confidentiality

I hope that by discussing issues surrounding the implementation of DPA we will be able to understand how it can work in junior high schools and make recommendations to other schools who may be struggling with the initiative. Information you provide us may be able to help others succeed. Information gathered may also improve DPA in your school.

There are no known risks involved within the study.

Information you provide will not be shared with others outside of the study. All information will be held private and your name and school name will be changed in text. Any information that may give away your identity to others will be removed. During the data analysis, the participants' privacy will remain the top priority. Information will be coded and stored in locked filing cabinets in an office at the University of Alberta to which only investigators will have access.

Freedom to Withdraw

The study is voluntary. You will be reminded that at any point during the study that you can withdraw with no questions asked by verbally informing or writing the primary investigator. Upon withdraw, you will be asked no questions. If you withdraw from the study data collected from you will be destroyed immediately.

Concerns

If there are any questions regarding this study ask the primary investigator Audra Thompson (780) 492-8182, or contact any of the co-investigators: Dr. Dru Marshall (780) 492-8182, Dr. Ron Plotnikoff (780) 492-4372 or Dr. Nancy Melnychuk (780) 492-0543. If there are any further questions contact the chair of the Research Ethics Board at the University of Alberta, Dr. Wendy Rodgers (wendy.rodgers@ualberta.ca (780) 492-2677). Dr. Rodgers has no direct involvement in the study.

Principal Informed Consent

Title of Project: *Implementing Daily Physical Activity in a Junior High School: A Case Study*

Part 1: Researcher Information		
Name of Principal Investigator: Audra Thompson Affiliation: Faculty of Physical Education and Recreation, University of Alberta Contact Information: audra@ualberta.ca (780) 492-8182		
Name of Co-investigator: Dr. Dru Marshall Affiliation: Faculty of Physical Education and Recreation, University of Alberta Contact Information: dru.marshall@ualberta.ca (780) 492-8182		
Name of Co-investigator: Dr. Ron Plotnikoff Affiliation: Faculty of Physical Education and Recreation, University of Alberta Contact Information: ron.plotnikoff@ualberta.ca (780) 492-4372		
Name of Co-investigator: Dr. Nancy Melnychuk Affiliation: Faculty of Education, University of Alberta Contact Information: nem@ualberta.ca (780) 492-0543		
Part 2: Consent of Subject		
Do you understand that you will be asked to take part in a research project?	Yes	No
Have you read and received a copy of the attached Information Sheet?	Yes	No
Do you understand that you are free to refuse to participate, or to withdraw from the study at any time, without consequence, and that your information will be withdrawn at your request?	Yes	No
Do you understand the benefits and risks associated with the study	Yes	No
Have the issues of confidentiality been explained to you? Do you understand who will have access to your information?	Yes	No
Part 3: Signatures		

I agree to take part in the study

Date_____ Printed Name _____

Signature _____

I agree to give researchers access to school documents

Date_____ Printed Name _____

Signature _____

Researchers Signature_____

Witness Signature _____

Student Information Letter

Date

Dear Student:

My name is Audra Thompson and I am a student at the University of Alberta. I am doing research for my degree under the supervision of co-researchers: Dr. Dru Marshall, Dr. Ron Plotnikoff and Dr. Nancy Melnychuk. My research project is called *Implementing Daily Physical Activity in a Junior High School: A Case Study.* I will be the main researcher for this study. I would like to invite you to participate in this study. This study will help me learn how Alberta's mandated Daily Physical Activity (DPA) initiative can be implemented in junior high schools. Your school has been selected for the study. I want to understand how the school implemented DPA, by observing and interviewing the principal, teachers and students.

You have been asked to take part in a focus group interview with other classmates. The interview will ask questions about your likes/dislikes of DPA and what activities you do and if you have any choices in DPA. The interviews will take place at school, during the first part of the lunch hour. Interviews will be tape recorded.

After I finish the interviews, they will be typed. I will compare what you said with what other students, teachers and principals said. I will look to see if I can find any similarities and/or differences in opinions toward DPA.

Benefits, Risks and Confidentiality

I hope that by hearing about the implementation of DPA I will be able to understand how DPA can work in junior high schools. Some schools might be having problems doing DPA and this research might help them improve DPA. Information you provide may help others succeed. Information gathered may also help to make more DPA improvements in your school.

There are no known physical risks involved within the study. During the focus group interviews, you may have different opinions than other students. Others might disapprove of your opinions about DPA. I will act as a guide to make sure that all students understand that each individual has the right to speak freely about your opinions. I will also inform students that others may voice opposing viewpoints.

Information you give me will not be shared with others outside of the study. All information will be held private. Your name will be changed in the research. Any information that may give away your identity will be removed. We will ask the other students in the interview to respect the privacy of others by not sharing the information they hear in the interview with others.

Freedom to Withdraw

You have the choice to participate. will be reminded that at any point during the study they can withdraw with no questions asked. They can tell or write me that they no longer want to be a part of the study. If they stop taking part, they will not be asked any other questions. Data from students that leave the study will be destroyed right away.

Student Informed Consent

Title of Project: *Implementing Daily Physical Activity in a Junior High School: A Case Study*

Part 1: Researcher Information		
Name of Principal Investigator: Audra Thompson Affiliation: Faculty of Physical Education and Recreation, University of Alberta Contact Information: audra@ualberta.ca (780) 492-8182		
Name of Co-investigator: Dr. Dru Marshall Affiliation: Faculty of Physical Education and Recreation, University of Alberta Contact Information: dru.marshall@ualberta.ca (780) 492-8182		
Name of Co-investigator: Dr. Ron Plotnikoff Affiliation: Faculty of Physical Education and Recreation, University of Alberta Contact Information: ron.plotnikoff@ualberta.ca (780) 492-4372		
Name of Co-investigator: Dr. Nancy Melnychuk Affiliation: Faculty of Education, University of Alberta Contact Information: nem@ualberta.ca (780) 492-0543		
Part 2: Consent of Subject		
Do you understand that you will be asked to take part in a research project?	Yes	No
Have you read and received a copy of the attached Information Sheet?	Yes	No
Do you understand that you are free to refuse to participate, or to withdraw from the study at any time, without consequence, and that your information will be withdrawn at your request?	Yes	No
Do you understand the benefits and risks associated with the study	Yes	No
Have the issues of confidentiality been explained to you? Do you understand who will have access to your information?	Yes	No
Part 3: Signatures		
I agree to take part in the study Date_____ Printed Name _____ Signature _____ Researchers Signature_____ Witness Signature _____		

Appendix B: Interview Guides

Teacher Demographic Information

"Before we start the interview, I'd like you to take a minute to fill out the demographic information below regarding your teaching background"

Years teaching at current school: _____

Subject area(s) currently taught:

_____

Grade level(s) currently teaching _____

Overall, years spent as a teacher: _____

Other subject area(s) taught in the past: _____

_____

Background Education (Degrees/subject matter):

_____

Teacher Interview Guide

"The purpose of this interview is to understand more about how teachers feel about how daily physical activity (DPA) has been implemented in this school. There are no right or wrong answers to any of these questions I am just interested in your thoughts, feelings and opinions. If there are any questions that you do not feel comfortable answering, just let me know and we can skip them"

1. Feelings toward physical activity

- What are your thoughts and feelings toward the importance of physical activity?
- Do you participate in any physical activities in your own time? Can you tell me about these?
    - *[Probe]*
        - *do you think obesity is an issue?*
        - *do you think children and youth are active enough?*

2. The need for DPA

- When the daily physical activity initiative was first announced, did you think there was a *need* for this kind of initiative in schools?
    - *[Probe]*
        - can schools make a difference?
        - are schools responsible to do this?
- Now that your school has implemented DPA, how do you feel about the initiative?
    - *[Probe]*
        - *do you think its beneficial?*
        - *do you think the students like it?*
- What do you think the other teachers think about the DPA initiative?
- How did your feelings of DPA change if at all over the implementation process?

3. DPA Program Implementation

- When the program was first implemented in your school, how did you feel about its clarity? The clarity in what you specifically would be required to do?
- What was your role?
- Were you told how to implement DPA?
    - *[Probe]*
        - *where the activities would take place, what activities, when*
- What has changed throughout DPA implementation?
    - *[Probes]*
        - *more staff meetings, staff discussions, principal meetings*

4. Personal Implementation of DPA

- When DPA first came into your school, how did you personally find implementing it? Can you explain what was difficult or easy?
    - *[Probes]*
        - *personal issues: lack of knowledge, efficacy toward physical activity, teaching strategies*
- Can you tell me what, if anything has changed over time?

5. The Principal and Implementation

- How do you think the principal(s) at your school initially felt about the initiative?
- What did he/she/they do to help with the implementation?
- Were teachers involved in any of the plans? If yes, how so?
- In your opinion, was the principal successful?
    - *[Probes]*
        - *advocating help, timetabling, emotional support*
- What could have been done differently by the principal?

6. Summary: Important Considerations for DPA Implementation

- Do you think your school is successful at implementing DPA?
- What do you think the key factor(s) in implementing DPA at your school is/are?
- If you left this school and started teaching at a school that was struggling with DPA implementation, what would you recommend they do?
    - *[Probes]*
        - *professional development*
        - *DPA teams/committees*
        - *teacher and student voice*
        - *community involvement*

Principal Demographic Information

"Before the interview starts I'd like to just ask you to fill out a few questions about your teaching background"

Years spent as Principal at current school: _____

Years spent as Principal overall: _____

Years spent as a teacher: _____

Subject area(s) taught in the past: _____

_____

Background Education (Degrees/subject matter):

_____

Principal Interview Guide

"The purpose of this interview is to understand more about how the principal(s) feels about how daily physical activity (DPA) has been implemented in this school. There are no right or wrong answers to any of these questions I am just interested in your thoughts, feelings and opinions."

1. Feelings toward physical activity

- What are your thoughts and feelings toward the importance of physical activity?
- Do you participate in any physical activities in your own time? Can you tell me about these?
    - *[Probe]*
        - *do you think obesity is an issue?*
        - *do you think children and youth are active enough?*

2. The need for DPA

- When the daily physical activity initiative was first announced, did you think there was a *need* for this kind of initiative in schools?
    - *[Probe]*
        - can schools make a difference?
        - are schools responsible to do this?
- Now that your school has implemented DPA, how do you feel about the initiative?
    - *[Probe]*
        - *do you think its beneficial ?*
        - *do you think the students like it?*
- What do you think the other teachers think about the DPA initiative?
- How did your feelings of DPA change if at all over the implementation process?

3. DPA Implementation Plans

- What was your initial plan to implementing the initiative? What did you do?
- Did you involve teachers, community etc. in this plan?
- How did you allocate resources and budget money?
- Were there any times you had to make changes to your implementation plan, if so, what were they?
- Why did you feel you had to make these changes?
    - *[Probes]*
        - *lack of clarity, teacher buy in, structural/time issues, lack of collaboration*

4. Principal's Role in DPA Implementation

- What are your roles and responsibilities in DPA initiative? Is this any different than it was at the beginning of implementation?

5. School Attitude toward DPA

- Overall, how do you think the teachers in your school feel about the initiative?
- How do you think the students feel about DPA?

6. Summary: Implementation

- Do you think your school is successful at implementing DPA?
- If so, what do you think the key factor(s) was in implementing DPA at your school?
- If you left this school and became a principal at a school that was struggling with DPA implementation, what would you do?

Student Interview Guide

"The purpose of this interview is to understand more about how students feel about how daily physical activity (DPA) has been implemented in this school. I will ask questions and let you answer them, and if you hear something that another student has said and you would like to comment on you may do so. There are no right or wrong answers to any of these questions I am just interested in your thoughts, feelings and opinions. Everyone will get a chance to speak, so let's make sure that we take turns speaking and that only one person speaks at a time."

1. Feelings, Attitudes, Preferences toward Physical Activity

- How do you feel about physical activity?
- Do you think it's important? Can you explain why/why not?
- Do you enjoy it/not enjoy it. Can you explain why or why not?
- What kinds of physical activities do you like?

2. Daily Physical Activity (DPA) at School

- Are you getting DPA everyday?
- How many minutes do you think you get at a time?
    - *[Probe]*
        - *all at once for 30 minutes, small ten minute times throughout the day*
- At your school you have Daily Physical Activity now. What kinds of activities do you do during DPA?
- Do the teachers provide you with a variety of different activities everyday?
    - *[Probe]*
        - *flexibility, strength, cardiovascular activities*
- Is DPA physically hard at times? Can you explain what is hard or easy about it?
- Do you think other kids might sometimes find it too hard or too easy?
- What choices do you as students get?
    - *[Probes]*
        - *Equipment, type of activity, participation*

3. Attitudes and Feeling toward DPA

- How do you think the teachers like DPA?
- Is there a teacher that leads DPA that you like best? Can you explain why?
    - *[probe]*
        - *Think back to grade 7 and 8*
- How do you think the principal likes DPA?
- Why do you like or dislike DPA?
- What do you think other students like/dislike about DPA?

4. Summary: Successful DPA

- Do you think DPA is successful in your school? Why might you think this?
- How can DPA be better? What ideas might you suggest?

Appendix C: Teacher Survey

Daily Physical Activity Survey

The purpose of this survey is to further understand how teachers at this school feel about DPA and its implementation. Please fill out the demographic information before proceeding to the survey.

Total years teaching: _____

Years taught at current school: _____

Education background/degrees:

_____

Circle each question with what answer you think best applies. There are no right or wrong answers to these questions and your honest responses are much appreciated.

Answer the following questions following this numeric scale
(1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree)

1. I feel that physical activity is important for student growth and development

   1 2 3 4 5

2. I feel that Daily Physical Activity (DPA) is an important initiative in schools

   1 2 3 4 5

3. I feel that the principal at this school has a positive attitude and beliefs toward the DPA initiative

   1 2 3 4 5

4. The current DPA implementation plan is clear and I know what my roles and responsibilities are in its implementation

   1 2 3 4 5

5. Teachers at this school are provided opportunities to participate in DPA planning.

1 2 3 4 5

6. Students at this school are provided opportunities to participate in DPA planning.

1 2 3 4 5

7. I think that DPA is successful at my school

1 2 3 4 5

Answer the following questions by beginning each phrase with:

Answer the following questions following this numeric scale
(1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree)

"When I implement DPA I....

8. Consider all students abilities

1 2 3 4 5

9. Provide opportunities for all students to succeed

1 2 3 4 5

10. Provide students with a variety of activities

1 2 3 4 5

11. Provide students with activities at different intensities

1 2 3 4 5

12. Give students choice

1 2 3 4 5

Circle which best applies

13. On average, my DPA sessions last roughly _____ minutes

0-10 11-20 21-30 more than 30

14. On an average weekly basis, I implement DPA

Once/week twice/week three/week four/week every week day